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Glenn Curtiss, on his biplane, during an exhibition flight over the sea at Atlantic City.

A SAFETY SPEED-ALARM FOR AEROPLANES.

By CAPT. BERTRAM DICKSON.

It may seem strange to those who are not practical pilots of wide experience that I should suggest that one of the most useful accessory fittings that could at present be devised for an aeroplane would be a speed alarm to tell us when we are flying too fast. I do not mean that the warning is needed in ordinary straightforward flying; there speed counts for much, maybe for everything in competitions, as I have found to my cost when frequently I have tried to clip the seconds of another's victory by corner work at mark towers that has almost torn the fabric from my near side wing. On the other hand, there is a time when too much speed is dangerous. It occurs in the *vol plane* or gliding flight to earth from those high altitudes to which all who would feel safe immediately ascend.

It is very difficult, indeed it is almost impossible, to estimate the speed at which one is rushing through the air, for at any height above about 1,000 ft. an aeroplane seems to be standing still, which is in itself a curious phase of flying that will perhaps be difficult for the uninitiated to realise. Only in some extreme cases does the machine give any warning of excessive speed by the display of an uneasy vibration of wires or unsteadiness of equilibrium. Sometimes I have known this to happen and have regarded it as a danger signal, but for the most part there is only the steady whistling of the wind past the tie wires in the way of an extraneous sound, and it would require more practice than is readily obtained in aviation to judge from that alone of the speed of flight.

It is undesirable to make a *vol plane* too fast because of the extra stress that it throws upon all parts of the machine, and particularly because of the extra stress created when the moment comes for bringing the aeroplane once more to an even keel. Unfortunately, we have lost in the Hon. C. S. Rolls one of our best pilots through this very cause, and although the circumstances may have been exceptional in that most regrettable instance, nevertheless they related directly to the same general situation. It appears also that Wachter was killed at Rheims through descending too fast with his motor running, and thus bringing extra strain on to a machine that had been much exposed to the rain during the morning. I am very decidedly of opinion that in the present state of the construction of aeroplanes, descending from great altitudes with the motor running is a dangerous proceeding. But, only with some motors can we throttle down the engine without stopping it altogether, and it is most essential to have an engine that can be accelerated instantly.

If, for any reason, the speed of flight is reduced below a safe value by a gust of wind or an error of judgment, the pilot's predicament if his engine is stopped is very unpleasant, particularly on a biplane, where so much

weight lies behind. The tail is apt to drop at once, and if the machine cannot recover, the consequences are likely to be disastrous, for the head goes up like a rocket for a few feet, and then the machine will fall like a rocket-stick, tail first to the ground. With a monoplane there is proportionately more weight in the head, and in the tendency thus created for the machine to fall head first lies the pilot's great chance of regaining speed and recovering his control.

Between the one extreme and the other a pilot is placed on the horns of a dilemma, for it is, as I have said, so difficult to obtain any accurate idea of speed during descent, and quite unwittingly one may travel far faster than is prudent, having regard to the possible consequences of the subsequent manoeuvre that must follow. It is not that the pilot wishes to go fast, but rather that the machine itself naturally tends to go faster on a downward grade, which is at the root of the trouble, and it is because those who have had much experience realise this that they are naturally anxious to be cautious. One of the best features of Morane's flying at Bournemouth, for instance, was the slowness of his *vol plane*, which he executed in the form of a corkscrew descent, using the rudder in the joint capacity of directive organ and brake.

Good judgment is, of course, everything in flying, but speaking from some considerable experience I can say that good judgment in estimating speed is not easy to acquire, and it is for this reason that I take the view that some suitable signal alarm would be of real practical value on an aeroplane. Such an instrument as this should surely not be difficult to construct. It should be a sound instrument and have a distinctive and penetrating note so that there is no mistaking its warning when in the air. Preferably it should continue to give an uninterrupted signal so long as the speed exceeds its predetermined value, and it would be useful, although not essential, if a certain range of speeds could be indicated by absolutely distinct notes. It seems to me that some form of instrument suitable for the purpose could be operated direct by the air blast created by the speed of flight. An alternative method would be to work a mechanical siren by a small windmill, while a third system that occurs to me is that of using the normal pressure on a small flat surface to operate electric contacts. This latter, however, is a less desirable method than the others, and it would involve carrying a battery of accumulators. Either of the other methods should lend itself to construction in a compact form suitable for attachment to one of the main struts of a biplane close to the pilot's ear. Needless to say, simplicity, reasonable lightness, and absolute reliability are essential qualities in any such apparatus.

OUR PRIZE OFFER.

Capt. Bertram Dickson's suggestion is one, coming as it does from an experienced pilot, that deserves serious attention on the part of all those engaged in the accessory section of the flight industry. We have no doubt also that many of our readers possessed of a constructive turn of mind will also speedily develop ideas on the subject, and in order to encourage all concerned we have decided to offer a prize of £5 for the best practical design published in *FLIGHT*.

It must be clearly understood that we are offering the

prize for ideas in the form of workable designs, and the Editor's judgment of what is best will be based on the results obtained with any instrument that is actually constructed, whether by the designer or not. Designs will be published in *FLIGHT*, and a competitor must make an appreciable improvement on any published design if his basic idea, being the same, is also to be admitted as eligible for the prize.

A closing date for the competition will be announced later.

FLIGHT PIONEERS.



MR. JAMES RADLEY.

SCOTTISH INTERNATIONAL FLIGHT MEETING.

By OUR SPECIAL COMMISSIONER.

Wednesday, August 10th.

THIS day was a remarkable one in many ways. In the first place the weather was almost ideal, the wind rarely being above 5 miles an hour, and for long periods it was given as 0 to 1 mile. Huge crowds were attracted, special trains from the length and breadth of Scotland all day pouring their passengers into the ancient little town of Lanark, interesting from its associations with William Wallace, till, as we mentioned in last week's issue in the brief particulars of the doings during the earlier part of Wednesday, some 50,000 spectators were gathered in the enclosures. This number sets up a new record for attendance at an aviation meeting, the largest hitherto being barely half this. Also there was far more flying than has ever been seen in this country before in one day. From start to finish there was rarely an interval, and at times three or four machines were in the air together. Three new records were set up, and the day was not without incident, although happily no one was hurt. A visit to the hangars in the morning showed that the repairs to Dickson's Farman were well advanced, the new frame with engine being in readiness for fitting and the skids in course of adjustment. In Blondeau's shed great activity prevailed, his machine being far more seriously damaged than Dickson's. Audemars, having tried a change of engine in the little Demoiselle, without any better results, has given it up as a bad job, and accordingly had it taken down and concentrated his attention on the Tellier. This combination of the skill of the famous builders of racing boats and the equally famous car manufacturers—the Panhard-Levassor engine—is one of the most promising designs. Its hull formation should result in a considerable lessening of skin friction, while the detail work shows signs of experience hard won on the deep sea. The water-cooled Panhard engine too should spell reliability when thoroughly used. Cody was fitting up two water-cooled Green motors, developing together some 120-h.p. Marcel Hanriot had his machine ready for flight, while Kuller all but had his Antoinette complete. He is having a forward strut of the distinctive Antoinette design made on the ground, and this is the one detail to which any close observer must take exception. If the front end of the skid were continued further forward and upward, and preferably slit to give greater flexibility, the arrangement might be satisfactory, but as fitted at present this skid would appear to invite disaster in alighting suddenly on rough ground. New arrivals at the hangars are a

Short biplane for Colmore and a Farman type built by Howard Wright, with an E.N.V. engine, for Dickson.

Drexel opened the day's proceedings by entering the altitude competition, the conditions being apparently perfect. There was a dead calm over the course, but above the clouds could be seen to be in distinct motion. One was not surprised, therefore, when at a height of about 1,400 ft. Drexel commenced to descend, and on his return he reported a strong and gusty wind above the 1,000-ft. level. Shortly after Cattaneo ventured up, but the appearance of a somewhat awesome thunder-cloud deterred the little Italian from ascending further. Happily the cloud passed, and McArdle next tried for altitude, followed by young Hanriot; the latter went up in easier stages than McArdle, and at 1,300 ft. he cut out his engine, and described a beautiful gliding flight, to the delight of the assembled thousands, who gave the plucky youth a great ovation on his return. Hanriot senior was delighted with his son's success and also with the reception which his machine had met with on this its first appearance at a British meeting. This monoplane is notable for the rearward position of the pilot, but the horizontal fins near the tail did not seem to be serving any very useful purpose as they were distinctly flapping, which must have retarded progress somewhat. Radley won the Starting Competition in 107 ft., which is 2 ft. better than his Monday's performance, but 3 ft. behind Gilmour's starting distance on the same day. Cattaneo made two British records during the day, covering the remarkable distance of 141 miles 188 yards in 3 hrs. 11 mins. This is both a duration and a distance record for this country, the best performance hitherto being Paulhan's cross-country flight from London to Lichfield (118 miles in 2 hrs. 39 mins.). In the evening the Italian made another flight of 54 miles. Drexel made three good flights of 47, 64 and 67 miles respectively, the last being in company with Cattaneo, and the two raced together for several laps. Champel, after 33 miles, fell in a fir plantation and some 30 trees had to be cut down before the impaled biplane could be extricated. Minor mishaps were frequent during the day. Edmond came down rather suddenly while on a passenger flight, Audemars broke a wheel, and Grace and Vidart damaged their running-gear by alighting too suddenly.

Radley did well this day, and must be counted as one of the most promising of the newer aviators. In the day's speed trials he made by far the best performances, and down the straight on one



Competitors at the Starting Line at Lanark Meeting, as seen from the Members' Enclosure.—The machines, reading from the front, are: No. 6, Cattaneo's Blériot; No. 12, Gilmour's Blériot; 18, Grace's Henry Farman; 131, Radley's Blériot; 11, Capt. Dickson's Farman; 21, McArdle's Blériot; 8, Blondeau's Henry Farman; 5, Champel's Voisin.

occasion he is credited with the terrific speed of 75 miles an hour. His best lap was 58'25 miles an hour, which is 2'41 miles better than the previous record made by Morane at Bournemouth.

The day's results were:—

Distance—

Cattaneo ... 195 miles 846 yds.	Champel... 32 miles 1,598 yds.
Drexel ... 179 " 1,440 "	

Speed (5 Laps)—

Radley ... 58'32 m.p.h.	Grace ... 38'88 m.p.h.
Cattaneo ... 56'27 "	

Fastest Lap—

Radley ... 58'25 m.p.h.	Gilmour ... 42'14 m.p.h.
Cattaneo ... 56'46 "	

Altitude—

McArdle... 2,290 ft.	Drexel ... 1,400 ft.	Hanriot... 1,350 ft.
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Daily Prizes.

Starting.—Radley, £20.

Long Distance.—Cattaneo, £25; Drexel, £10.

Speed (5 Laps).—Radley, £50.

Speed (Fastest Lap).—Radley, £25.

Height.—McArdle, £20.

Thursday, August 11th.

If anyone had been in the air on Thursday morning there would have been no doubt of the situation of Lanark. On the present occasion all roads lead to Lanark and the dust from the hurrying cars rose high above the hedge-tops. Driving in from Glasgow on a 15'9-h.p. Arrol-Johnston, kindly put at my disposal, I had the worst dusting since certain days in the Scottish Trials of pious memory. The day was again brilliant, perhaps too brilliant, and on arrival at the course the wind was found to be from 16 to 20 miles an hour. Consequently the crowds, which were well-ligh as large as on the previous day, had a two hours' wait—about the longest up to the present—but this was relieved by the carrying into effect of a suggestion made by a *Glasgow Herald* reporter. Accordingly the different machines were trundled along the stands that the people might have a close view of the various types. Drexel made several good flights in a very tricky breeze to give the people something for their money, while Kuller's attempts to get his big Antoinette aloft provided something to see. The Antoinette is certainly the finest looking machine on the ground, with its great wing spread and polished-wood hull. The engine, however, was not pulling well, and when once away it failed just as a breeze caught the machine. First one wing grazed the ground and then the other, then the front skid touched the ground, dug a trench for a few feet, and brought the machine up

dead with its tail almost vertical. The propeller had both blades broken off short, but the ingeniously-curved wood tips to the wings saved these from damage. Kuller was quite safe, and had unstrapped himself and was examining the damage long before anyone had reached him. Later in the day a second propeller shared the same fate, but, nothing daunted, the Dutchman fitted a third, and succeeded in averaging 45 odd m.p.h. over a couple of laps. His engine, however, was obviously not doing its best, and by far the greatest number of mishaps at this meeting may be attributed to engine failures. A round of the hangars found Champel still busy on his Voisin, which will probably not fly again this week, the repair of the skids and the recovering of the planes requiring considerable time. Edmond was testing his propeller, and in one of the unappropriated hangars a Howard Wright biplane with E.N.V. engine was being erected. Cody had his two Green engines mounted, and a mechanic was just adjusting the triangulated distance frame from crank-shaft to propeller. With over 120-h.p. at his command, our veteran flyer should certainly be able to do better than he has hitherto. Captain Dickson had his Farman ready, and during the morning made a trial spin, but found the wind too troublesome to stay aloft for long. Kuller it appears had a narrow escape from fire last night, a plumber's lamp igniting a petrol tank which, however, a mechanic courageously picked up and threw outside, thereby, at the expense of a burnt hand, preventing a conflagration. The wind dropped slightly in the afternoon when Radley, Drexel and Cattaneo made good speeds over the 5 laps, but the slower machines of Grace, Edmond and Ogilvie made but a poor show with the 18-mile breeze. The wind, however, lent added interest to the slow circuit, which was easily won by Cockburn, who flew the first Farman brought into this country, keeping its speed down to 26'32 miles an hour.

This day had been chosen for the flight around Tinto Tap and back for the *Glasgow News* prize of £100, and the atmospheric conditions were against the 15-mile journey, so that the shorter trip to Dunsyre Hill and back was selected. From the turning point on the hill the spectacle was a very fine one as the machines swept up at great speed some 1,000 ft. in the air, while clouds of dust on the roads betrayed the presence of the slower road vehicles. The biplanes were away first, but the more graceful monoplanes overhauled them easily. However, both monoplanes were unfortunate enough to touch ground before reaching the starting line, leaving Grace on his Farman first, with Dickson second.

The sensation of the day, however, was reserved to the last when McArdle and Drexel went out for altitude. The former came down at 2,730 ft., leaving Drexel still ascending. At about 3,000 ft. the daring American was seen to enter a cloud bank. For a time no anxiety was felt, but as time went on it was obvious that something had happened. It was known that Drexel only had enough petrol to last him some 45 mins., so that the descent would have been made at no great distance. After two hours had



Champel's Voisin biplane after its fall into the fir plantation at Lanark Aviation Meeting.

elapsed without word being received, cars were despatched with search parties, but at 9.30 p.m., about two hours and a half after he had left the ground, a wire was received from Drexel himself, from Cobbinshaw station, 18 miles out of Edinburgh. It appeared that when he came out of the clouds on the descent he found himself away from the course, and in the fast-growing dusk was quite unable to locate it. He accordingly sought for level ground on which to alight, and finally selected a field near the farmstead of Wester Mossat, where he alighted in perfect safety without any injury to the Blériot. The farm folk were naturally greatly surprised. Drexel borrowed a bicycle and rode to the nearest station, where he wired to the course as already stated, asking for mechanics to be sent to bring in the machine, which stood in the long grass looking for all the world like a dead bird.

The day's results are:—

Speed (5 Laps)—

Radley ...	57'45 m.p.h.	Grace ...	38'87 m.p.h.
Cattaneo ...	55'07 "	Ogilvie ...	36'16 "
Drexel ...	43'68 "	Edmond ...	31'60 "

Fastest Lap—

Radley ...	58'14 m.p.h.	Grace ...	38'79 m.p.h.
Cattaneo ...	55'55 "	Ogilvie ...	36'39 "
Kuller ...	45'02 "	Edmond ...	34'5 "
Drexel ...	43'49 "		

Slowest Circuit—

Cockburn ...	26'32 m.p.h.	Dickson ...	27'24 m.p.h.
Ogilvie ...	26'75 "	Edmond ...	31'51 "

Cross-Country—

Dickson ...	36 mins. 50 secs.	McArdle and Radley touched
Grace ...	32 " 51 "	ground

Altitude—

Drexel ...	6,750 ft.	McArdle ...	2,730 ft.
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Daily Prizes.

Speed (5 Laps).—Radley, £50.

Speed (1 Lap).—Radley, £25.

Cross-Country.—Grace, £100 and further special prize of £100; Dickson, £30.

Altitude.—Drexel, £20.



Graham Gilmour on his Blériot with one of his passengers, Mr. Moorhouse.

Friday, August 12th.

At about 1.30 this morning Drexel arrived back at the course, having been picked up by his partner, McArdle, none the worse for his adventure in cloudland. It appears that Drexel went aloft with the deliberate intention of ascending to the greatest possible height. His machine behaved splendidly, although the engine was tried considerably in finishing the last 50 ft., which were only made with difficulty owing to the rarity of the atmosphere. Drexel's greatest difficulty was to hold out against the intense cold which benumbed his hands, rendering one practically useless, and it was his physical condition which caused him to descend, in doing which he lost all knowledge of his position. He was in the air some 50 minutes, of which the descent occupied but 6. The sealed barograph was taken charge of by the officials, and on arrival at the course was opened by Captain Taylor, who has charge of the height recording. It was found to register no less than 6,750 ft., which constitutes a new world's record for altitude, beating even Brookins' performance at Atlantic City by 575 ft. There is no real doubt of the record, but the barograph is to be sent to Kew Observatory for a certificate as to its accuracy.

This morning was bright, despite a night of heavy rain, but the wind was gusty, being for the most part from 20 to 25 miles an hour. However, towards one o'clock five machines came out for the starting competition. As the wind was westerly, the ascents were made towards the hangars, a fact which gave rise to one exciting incident. As McArdle was on the point of alighting a gust caught the machine, and for a moment it seemed as if the pilot would have to lift the monoplane right over the sheds. In counteracting the lift of the wind, however, McArdle brought the machine down on its head right at the entrance to the shed. The propeller was smashed, but the engine was undamaged and the chassis but slightly strained. Radley made by far the best start, rising in 57 ft. In the passenger-carrying starting competition, Ogilvie made the best start in 147 ft. Kuller, who, when his engine is pulling properly, is indifferent to anything but a gale, brought out his Antoinette for a long-distance attempt. After several attempts he managed to rise against the wind, and turning, covered about two-thirds of the course. His engine was obviously pulling feebly, and the machine kept low. When approaching the fir wood into which Champel fell earlier in the week it was obvious that he was in difficulties, and, despite his efforts to lift the Antoinette over, it dropped by the tail. The latter came adrift, and the entire machine settled down on the young saplings. Before anyone could reach the spot Kuller emerged unscathed. The machine was found to have its skid smashed and the propeller hopelessly chipped. Thanks, however, to the fact that the trees were of younger growth than where Champel fell, the planes were not injured. Assistance was quickly forthcoming, and the surrounding trees being cut down, the machine was taken apart and conveyed back to the hangars in sections. Kuller seems to have been dogged by misfortune ever since his arrival in this country, although he has hitherto possessed a record clear of mishaps. As in so many cases, his troubles have been due to engine failures. The wind showing no signs of abating but little flying took place, and the crowd had for many hours nothing to see but a parade of the various machines. Great disappointment was felt at the definite abandonment of the flight to Glasgow and back, which was to have taken place to-day. Saturday being the last day of the meeting, with many events down for decision, it was not deemed possible or advisable to postpone it. The gate this day was the least of any and for the first time the crowds were obviously disappointed.

Results for the day:—

Daily Starting Competition.—Radley, 57 ft., £20.

Starting with Passenger.—Ogilvie, 147 ft.

Cross-Country Flight (Glasgow Evening News Prize).—Grace, £100.

Saturday, August 13th.

The Lanark flying week finished as it began, with glorious weather, and early in the day it was evident that the attendance was going to be a large one. Unfortunately the wind in the morning was fluky, and no doubt the gate was prevented to some extent from being even larger by the ill-advised poster of a Glasgow evening paper, which read "prospects doubtful." Happily people have learnt that the evening is the best time to see real flying, and paid less attention to this information than they would have done a week ago. As on other days, the 31,215 people in the general enclosure took things as they came, and were not slow to appreciate and applaud the aviators when they did venture forth. One flyer received a great ovation during one of the weary intervals, and he was a gull, which after circling over the course for some time made a magnificent swoop down the straight in front of the enclosure. On one occasion during the week a couple of crows followed in the wake of a biplane for a considerable distance, intent

evidently on closer inspection of this strange invader of their element. Another time some wild duck, aroused from the Clyde, which skirts the course at its eastern end, were evidently scared by the approach of a Blériot, and made off at all speed with a great quacking. A visit to the hangars this morning found Kuller packing up his Antoinette disgusted with his misfortunes. Blondeau and Champel after much hard work had succeeded in putting their machines in order again, and the former in the afternoon entered for the special speed competition. Cattaneo, Drexel and Radley had their monoplanes in the pink of condition, ready to secure the honours of the day when the wind dropped, and Grace and Dickson had their biplanes no less fit. The day's programme included cross-country flights, speed, altitude, weight-carrying and delivery of despatches competitions. An additional event with extra prizes was also added to the day's programme, this being a speed test over a straight measured mile. In connection with this event Radley made a new record, his average speed being no less than 76 m.p.h., which is the highest recorded speed for an aeroplane. As speed events have generally taken place on a circular course, this performance rather sets up a new record than breaks an old one. Colmore, who had only got up his Short biplane the previous day, came out in this competition; but his first flight was also his last, for he failed to clear a clump of trees at the far end of the course, and came down, smashing his propeller and wrecking his lower plane. By five o'clock the spectators were having plenty of flying. Practically every machine was on the line, and the special speed event attracted most of the competitors. After the speed event, Drexel came out and made several exhibition circuits, and was succeeded by Captain Dickson, whose splendid finish to his slow circuit met with great approval. He executed a *vol plane* in the very front of the grand stand, alighting with the judgment and precision for which he is famous. His time of 4 mins. 53 secs. for the $1\frac{1}{2}$ miles of the course is the best so far, and should win the prize, as Cockburn yesterday could not reduce his speed below 26 miles an hour, while Dickson's works out at about 21½ miles. Between 5 and 6 o'clock as many as six machines were in the air together, and both Cattaneo and McArdle made a diversion by circling outside of the course altogether. By the way, it is worthy of note that Cody made the first ascent to-day, going out at 12.25 with a wind of from 20 to 25 miles. He left the ground a few feet, came down at the far end of the course, and then came back. In the evening, however, Cody made several good circuits, flying steadily and at a fair height with his son as passenger. The twin engines, however, of which he expected so much, did not turn out a success, as they refused to synchronise. After wasting much time in erecting them, he therefore took one out. Given a good engine of sufficient power, there would be no reason to doubt the qualities of the Cody biplane. Heavy it may be, but as a finished piece of work it has few rivals. Cody informed me that he intends to experiment with a new tail formation, a longitudinal plane being fitted at the propeller centre, being carried on a shaft actually taking a bearing in the propeller-boss, and, of course, stayed from the main frame. The idea is to do away with the propeller swirl and to direct the air current into a straight rearward path, which would greatly steady the machine.

The first real flight of the day was by young Marcel Hanriot on his father's machine, and he made an excellent round at a height of about 200 ft. in a nasty wind. The Hanriot machine may be slow, and this probably is merely an engine matter, but there can be no doubt as to its stability. For steady flight under all conditions there was no machine to approach it. He also tried a passenger flight, but only got the length of the straight when he had to come down. Grace entered the weight-carrying competition, and took with him as passenger Major Lionel James, *The Times* war correspondent. He succeeded in getting round three-quarters of the circuit, but failed to clear the rising ground beyond the farm where Blondeau fell. No harm was done, and as the circuit had been shortened for this event on account of the wind, he won by this flight the £30 daily prize and the £250 prize for the best performance in the four days. McArdle, Grace and Dickson competed in the cross-country flight to Dunsyre and back, and finished in the order given, McArdle's time being 23 mins. 4½ secs., which is equal to 58.63 m.p.h., the fastest at which this 23-mile trip has been covered during the week. Before the close of the meeting several passenger flights were made, Drexel taking up two ladies on his passenger Blériot, one of whom was the wife of Captain Taylor, who had charge of the surveying section. On his third flight, however, his engine failed, and he had to alight—with a male passenger this time—on somewhat rough ground, but no damage was done. Just before this Radley had left for altitude, and at a height of 800 ft. was seen to fall. An official "159" Arrol-Johnston was at once despatched, carrying an official, to bring back the barograph, and the writer; but, together with the 100-h.p. Austin, with Gibbs at the wheel, we found ourselves on the opposite

bank of the Clyde. Radley, however, was unhurt, but the under-carriage of the Blériot was wrecked. Returning we came across Drexel and his passenger standing by their machine in a hollow, and were able to give them a lift back to the hangars. But for these two cases of engine trouble, the Gnome engine has had practically a clean record during the meeting, the majority of the failures being with engines of the more conventional type. Grace closed the meeting by wrecking his Farman. Several people were eager to go up with him, among them being Mrs. R. J. Smith, whose husband, however, did not seem very keen on the idea of her going aloft. Grace's flight with Professor Harvard Biles, the famous naval architect, brought his passenger flights to a sudden conclusion. When almost about to alight the propeller flew into pieces, which tore the upper plane badly, and were picked up 30 and 40 yards away by souvenir hunters. Control of the steering in consequence was completely lost, and the machine turned towards the enclosure, striking the ground at an angle and with such force that the whole of the chassis was carried away. Grace and his passenger, however, rose unhurt.

The Close of the Meeting.

The great International Scottish meeting at Lanark was brought to a close by a dinner at the Clydesdale Hotel, which had formed the official headquarters during the week. The chair was taken by the Lord Provost of Glasgow, supported by the promoters, officials and competitors, and an enthusiastic crowd stood in the street and cheered lustily as the names of the prize winners were heard through the open windows. A few enthusiasts waited till the end of the function, and when a group of the flying men were seen in the vestibule, Cattaneo was seized and carried shoulder high into the street, where he had to shake hands with all and sundry. There were but few speeches at the dinner, Lord Provost M'Innes Shaw remarking, however, that it would be ungracious if those who had attended one of the most successful aviation meetings ever held, not only in Great Britain, but in the world, allowed the occasion to pass without pledging the health of those aviators who had come to Lanark and made the gathering such a success. He did not like to mention names, but he was sure they were all very proud of the altitude record made by their friend Mr. Drexel. They were also very proud that another world's record had been broken by a British aviator, Mr. Radley, while they were especially delighted



Vidart in the pilot's seat of his Hanriot monoplane at Lanark Meeting.

with the performances of Cattaneo. As the Lord Provost concluded his remarks there were calls for "Drexel," and in spite of being asked to be excused, the popular American had to reply. "I have never made a speech before," he said, "and I have never attended a better meeting. When I came to Scotland I was rather pessimistic about it, because I thought we would have nothing but wind and rain all the time. I have changed by ideas entirely. I have never seen better weather anywhere at any meeting, and when I saw Radley going round for speed I thought the way he took the pylons was the most wonderful thing I have seen."

Mr. Radley commented on the attendance at the meeting and the few people who sought convenient spots outside from which to view the flying.

Mr. Grace, the principal prize winner, said it was fortunate for him that there had been separate classes for monoplanes and biplanes, as otherwise he would not have been so successful. He thought that doing so was only encouraging an antiquated type of machine which should not exist any longer.

Signor Cattaneo, replying in French, considered that the Executive

had been even more successful than French and German officials, and he thanked the "Maire of Glasgow" for his hospitality.

Mr. McArdle said he thought he was voicing the opinion of all the aviators when he said they were delighted with the treatment they had received, for it had been thoroughly fair, generous and honourable.

Mr. Cody was sorry that he had been asked to speak, for he had done nothing, but thought they would believe in his ultimate success.

Mr. Drexel.—There is only one thing wrong with Mr. Cody's machine, and that is, that he wants a 100-h.p. Gnome.

Mr. Radley.—He has the best machine in the country.

Professor Barr replied for the management and acknowledged the valuable assistance rendered by the Aero Club. He thought the Lanark meeting would go down in history as the first aviation gathering conducted with perfect safety. He also referred to the great organising ability of Mr. R. J. Smith, and certainly if ever a tribute was earned, the indefatigable and ever-courteous secretary of the meeting had more than deserved his.

SUMMARY OF LANARK MEETING AND OFFICIAL RESULTS.

By H. MASSAC BUIST.

THE results of the meeting, as officially returned, are set forth in detail in the following set of tables, in connection with which it should be explained that the letter "M" printed after the name of a machine indicates that it is a monoplane or single-surface flyer, and in like fashion the letter "B" means the machine is a biplane, or double-surface machine. An analysis of this list of performances, which includes all the prizes awarded, reveals that a total of £8,060 has been paid in connection with the various competitions. Of that total, £7,940 goes to pilots, and a total of £120 to competitors' assistants. In face of the various achievements, too, it is interesting to discover what are the aggregate sums of money made by each competitor. Here is the list: Mr. Cecil Grace, £1,950; Signor Bartolomeo Cattaneo, £1,565; Mr. J. Armstrong Drexel, £1,340, together with the Lanark Trophy and the *Scots Pictorial* Cup; Mr. J. Radley, £1,170; Captain Bertram Dickson, £900; Mr. F. W. McArdle, £470; M. Georges Chavez, £220; Mr. A. M. Ogilvie, £210; M. F. H. Champel, £50; Mr. G. Gilmour, £45; M. Gustave Blondeau, £10; and Mr. G. C. Colmore, £10, making a total of £7,940. As Mr. Grace was using Mr. Lancelot D. L. Gibbs's Farman biplane, he, of course, shares his total prize money with the owner, and the fact that he heads the list of events reveals incidentally what can be done by flying constantly throughout the meeting. Mr. Cecil Grace lent Mr. Armstrong Drexel his Blériot monoplane when the world's record altitude was achieved. Mr. Radley's series of successes are in the nature of an agreeable surprise.

Special Prize for Flying Mile and Kilometre.

It is inevitable, sooner or later, in the sport of aeroplaning, that we should introduce competitions for the fastest mile and fastest kilometre events. But for the enterprise of Mr. A. V. Ebbelwhite, the head official timekeeper, in drawing the attention of the organisation to this fact, these tests might have been first tried abroad; whereas now the distinction belongs to this country, for all records of flying speeds over measured miles and measured kilometres will date as from Saturday's performances at the International Aviation Meeting at Lanark. The following data are, therefore, of an historic nature. The performances over the measured mile were as follows:—

Prize.	Competitor.	Aeroplane.	Motor h.p.	Secs.	m.p.h.
£					
40	Radley ...	Blériot M....	50 Gnome...	47½	75·95
10	McArdle...	Do. ...	Do. ...	49½	72·29
	Cattaneo...	Do. ...	Do. ...	52½	68·70
40	Grace ...	Farman B.	Do. ...	65½	54·71
10	Blondeau ...	Do. ...	Do. ...	69½	51·57
	Colmore ...	Short B. ...	Do. ...	70½	51·28
	Dickson ...	Farman B.	Do. ...	74½	48·38

There were two prizes for the best performances by a monoplane and two for the best performances by a biplane, and a similar arrangement in regard to the kilometre events, which resulted as follows:—

Prize.	Competitor.	Aeroplane.	Motor h.p.	Secs.	m.p.h.
£					
40	Radley ...	Blériot M....	50 Gnome...	28½	77·67
10	McArdle...	Do. ...	Do. ...	30½	72·62
	Cattaneo...	Do. ...	Do. ...	30	72·60
40	Grace ...	Farman B.	Do. ...	40	55·92
10	Colmore ...	Short B. ...	50 Green ...	42½	52·75
	Blondeau ...	Farman B.	50 Gnome...	42½	52·26
	Dickson ...	Do. ...	Do. ...	45½	49·05

It will be observed that in every instance the flyers achieved a greater speed over the kilometre than over the mile distance, despite the fact that only one flight was made for both events. The explanation lies in the fact that the kilometre was measured backwards as from the finishing line, while the ground towards the starting end was high by comparison with the neighbourhood of the finish. This meant that many of the machines, particularly the biplanes, had to continue rising for anything up to 400 yards after passing the starting line, while practically all were able to do the finishing two-thirds of this straight-away course on a slight decline, because the ground slanted away below them, so that in these circumstances, though gradually descending, they were still maintaining a constant altitude in relation to the earth. Most of them kept at heights between 100 and 200 ft.

Greatest Altitude Competition.

It was laid down that to qualify for the first prize for greatest altitude of the meeting a minimum height of 1,000 ft. had to be achieved, and for the second and third prizes ascents of at least 500 ft.

Prize.	Competitor.	Aeroplane.	Declared motor h.p.	Altitude. ft.
£				
400	Drexel ...	Blériot M. ...	50 Gnome ...	6,750
200	Chavez ...	Do. ...	Do. ...	5,250
75	Cattaneo ...	Do. ...	Do. ...	3,240
	McArdle ...	Do. ...	Do. ...	2,730
	Grace ...	Farman B. ...	Do. ...	2,480
	Hanriot ...	Hanriot B. ...	40 Clerget ...	1,350
	Radley ...	Blériot M. ...	50 Gnome ...	1,550
	Vidart ...	Hanriot B. ...	40 Clerget ...	1,300

Mr. J. Armstrong Drexel's performance is a world's record, representing a rise in about 52 mins. only to a height of 2,250 yards, otherwise a mile and a quarter. Mr. Radley's performance on Saturday, as recorded above, terminated abruptly in a forced descent owing to the failure of the motor. The special prize of £100 for the monoplane rising to the greatest height during the meeting was awarded to Mr. J. A. Drexel for his performance set out above, and the special prize of £100 for the biplane attaining the greatest height during the meeting was carried off by Mr. Cecil Grace, whose achievement is chronicled in the foregoing table.

Highest Daily Altitude.

There was offered a prize of £20 to the competitor who ascended to the greatest height each day on an aeroplane of any description. Nobody made an essay on Saturday, 6th inst. The winners each day last week were as follows:—

Day.	Competitor.	Aeroplane.	Declared motor h.p.	Altitude. ft.
Monday ...	Chavez ...	Blériot M.	50 Gnome...	5,250
Tuesday ...	Drexel ...	Do. ...	Do. ...	4,270
Wednesday ...	McArdle ...	Do. ...	Do. ...	2,290
Thursday ...	Drexel ...	Do. ...	Do. ...	6,750
Saturday ...	Cattaneo ...	Do. ...	Do. ...	1,300

Speed Competition.

The following is the order of merit for the fastest single flight five consecutive times round the course without alighting made during the entire meeting, the distance being 9 miles 300 yds. :—

Prize. £	Competitor.	Aeroplane.	Declared motor h.p.	Time. m. s.	m.p.h.
200	Radley ...	Blériot M.	50 Gnome...	9 32½	58.32
100	Cattaneo ...	Do.	Do. ...	9 53½	56.27
50	McArdle ...	Do.	Do. ...	10 34½	52.63
	Drexel ...	Do.	Do. ...	12 44½	43.68
	Grace ...	Farman B.	Do. ...	14 4½	39.55
	Dickson ...	Do.	Do. ...	14 39½	37.95
	Edmond ...	Bristol B.	60 E.N.V.	16 4½	34.60

The fastest single circuit of the course made by a monoplane during the entire meeting without touching the ground, for a prize of £100, was won by Mr. Radley on his Blériot machine, by his British record performance at 58.25 m.p.h. A £100 prize for a biplane in the same competition was won by Mr. Cecil Grace on his Farman machine at 39.78 m.p.h.

Fastest Flights Each Day.

In addition to the foregoing there was awarded a series of prizes for the fastest flights each day five times round the course without alighting, making a distance of 9 miles 300 yds. :-

Day.	Prize. £	Com- petitor.	Aeroplane.	Declared motor h.p.	Time. m. s.	m.p.h.
Saturday...	50	Cattaneo	Blériot M.	50 Gnome	13 8½	42.35
Monday ...	50	Radley	Do.	Do.	9 41½	56.45
Do. ...	30	Cattaneo	Do.	Do.	10 41	52.08
Do. ...	15	Grace ...	Farman B.	Do.	14 4½	39.51
Tuesday ...	50	Radley	Blériot M.	Do.	10 6½	55.05
Do. ...	30	Cattaneo	Do.	Do.	10 40	52.92
Do. ...	15	Drexel...	Do.	Do.	11 41½	42.77
Wednesday	50	Radley	Do.	Do.	9 32½	58.32
Do.	30	Cattaneo	Do.	Do.	9 53½	56.27
Do.	15	Grace ...	Farman B.	Do.	14 22½	38.88
Thursday	50	Radley	Blériot M.	Do.	9 40	57.47
Do.	30	Cattaneo	Do.	Do.	10 6½	55.07
Do.	15	Drexel...	Do.	Do.	12 44½	43.68
Saturday...	50	Radley	Do.	Do.	9 41½	57.39
Do. ...	30	McArdle	Do.	Do.	10 34½	52.63
Do. ...	15	Cattaneo	Do.	Do.	11 5½	50.14

Mr. Radley's performance on Monday constituted a British record for fast flying, which he bettered on Wednesday.

Slowest Circuit Competition.

There is merit in flying slowly. Only £100, however, was offered as a prize for a single circuit of the course on any of four days during the meeting, subject to the provision that in deciding the award for the prize the stewards were deemed the sole judges as to whether or not the circuit made by any particular competitor was the shortest that could be safely made, consideration being given to the force and direction of the wind and to the condition of the atmosphere. The prize of £100 was won by Mr. A. Ogilvie, whose performance is set out below :-

Competitor.	Aeroplane.	Declared motor h.p.	Time. m. s.	m.p.h.
Ogilvie ...	Wright B. ...	27 Wright ...	4 19	24.11
Dickson ...	Farman B. ...	50 Gnome ...	4 2½	25.72
Cockburn ...	Do. ...	Do. ...	3 57½	26.32
Champel ...	Voisin B. ...	60 E.N.V. ...	3 38½	28.62
Edmond ...	Bristol B. ...	Do. ...	3 34½	29.12
Grace ...	Farman B. ...	50 Gnome ...	3 17	31.70

Fastest Single Cross-Country Flight.

In addition to the foregoing there were daily prizes for the fastest single cross-country flight without touching the ground on each of the four days on which the competition took place.

Day.	Prize. £	Competitor.	Aeroplane.	Declared motor h.p.	m. s.
Monday	100	Dickson ...	Farman B.	50 Gnome	36 8½
Tuesday	100	Radley ...	Blériot M.	Do.	25 37½
Thursday	100	Grace ...	Farman B.	Do.	32 57
Do.	30	Dickson ...	Do.	Do.	36 6½
Saturday	100	McArdle...	Blériot M.	Do.	23 4½
Do.	30	Grace ...	Farman B.	Do.	32 21½
Do.	10	Dickson ...	Do.	Do.	38 9½

The prize of £100 presented by Messrs. Hugh and Andrew T. Reid for the fastest single cross-country flight during the entire meeting without touching the ground was won by Mr. F. W. McArdle on his Blériot monoplane, with which he made a mean speed of 58.63 miles an hour.

The special prize of £100 awarded to the biplane making the fastest cross-country flight during the entire meeting was won by Mr. Cecil Grace on his Farman biplane for his flight at a mean speed of 41.94 miles an hour. The *Glasgow Evening News* prize of £100

for the fastest cross-country flight by a British aviator goes to Mr. Cecil Grace for his performance on a Farman biplane of 32 mins. 57 secs.

Long Distance Competition.

This took place on four days of the meeting. The three money prizes were awarded for the longest single flight in point of distance round the oval course mapped out by mark towers and without touching the ground during the meeting.

Prize. £	Competitor.	Aeroplane.	Declared engine h.p.	Miles Yards.
250	Cattaneo...	Blériot M. ...	50 Gnome...	141 188
100	Drexel ...	Do. ...	Do. ...	67 1,068
50	Champel...	Voisin B. ...	60 E.N.V.	32 1,598
	Grace ...	Farman B.	50 Gnome...	31 305
	Blondeau ...	Do. ...	Do. ...	26 550
	Edmond ...	Bristol B. ...	60 E.N.V.	23 264
	Ogilvie ...	Wright B. ...	27 Wright...	19 658
	Dickson ...	Farman B.	50 Gnome...	12 766
	Vidart ...	Hanriot M.	40 Clerget	11 858
	Cockburn	Farman B.	50 Gnome...	5 1,414

Signor Cattaneo's performance is a British record. In addition to the foregoing there were three prizes for the competitors who spent the greatest time in the air in this competition during the entire meeting. The first prize of £250 under this head was won by Signor Cattaneo with his Blériot monoplane, and a record of 8h. 35m. 53½s.; the second prize of £100 by Mr. J. A. Drexel with his Blériot monoplane with a record of 7h. 31m. 18½s.; the third, £50, by Mr. C. Grace with his Farman biplane with a record of 7h. 29m. 24½s.; while Professor Archibald Barr's Scottish Aeronautical Society's President's Prize of £100 to the British aviator who stands first under the above heading goes to Mr. Grace for the foregoing performance.

Fastest Single Circuit.

A daily prize was offered throughout the meeting for the fastest single circuit, without touching the ground, with a monoplane, and a like prize for a biplane. Each of these prizes was of £25.

Day.	Competitor.	Aeroplane.	Declared motor h.p.	Time. m. s.	m.p.h.
Saturday...	Cattaneo	Blériot M.	50 Gnome	2 4	50.36
Monday ...	Radley	Do.	Do.	1 47½	58.52
Do. ...	Grace...	Farman B.	Do.	2 37	39.78
Tuesday ...	Radley	Blériot M.	Do.	1 50½	56.36
Do. ...	Grace ...	Farman B.	Do.	2 42½	38.36
Wednesday	Radley	Blériot M.	Do.	1 47½	58.25
Do.	Grace ...	Farman B.	Do.	2 40½	38.72
Thursday	Radley	Blériot M.	Do.	1 47½	58.14
Do.	Grace ...	Farman B.	Do.	2 41	38.79
Saturday	Radley	Blériot M.	Do.	1 49½	57.19
Do.	Grace ...	Farman B.	Do.	2 38	39.52

Mr. J. Radley's performance on Monday constituted a British record for speed.

Longest Daily Distance Competition.

On each of four days there were offered two cash prizes to the competitors who remained longest in the air in the longest single flight competition.

Day.	Prize. £	Competitor.	Aeroplane.	Declared motor h.p.	h. m. s.
Saturday	50	Drexel...	Blériot M.	50 Gnome	1 44 26½
Do.	10	Cattaneo	Do.	Do.	0 54 40½
Monday	25	Do.	Do.	Do.	3 18 9½
Do.	10	Drexel...	Do.	Do.	1 27 13
Wednesday	25	Cattaneo	Do.	Do.	4 23 4½
Do.	10	Drexel...	Do.	Do.	4 11 33½
Friday	25	Do.	Do.	Do.	0 8 5½
Do.	10	Grace ...	Farman B.	Do.	0 7 51½

Cross-Country Flights.

This competition was open on four days of the meeting, there being prizes for the aggregate of cross-country flights made without touching the ground during the meeting, only competitors who had completed a minimum distance of 24 miles being eligible for the first two awards, and 12 miles being the minimum for the third prize. Moreover only completed out-and-return flights were reckoned. A special prize of £100 presented by Messrs. Hugh and A. T. Reid to the British aviator who made the best record in this competition was awarded to Captain Bertram Dickson for his performance of 67 miles 880 yds. on a Farman biplane.

Prize.	Competitor.	Aeroplane.	Declared motor h.p.	Mls. Yds.
400	Dickson ...	Farman B. ...	50 Gnome ...	67 880
200	Grace ...	Do. ...	Do. ...	45 —
100	Radley ...	Blériot M. ...	Do. ...	22 800
	McArdle ...	Do. ...	Do. ...	22 800

Aggregate Long-Distance Flight.

This competition was for the longest aggregate distance flown during the meeting under the combined long-distance competition and cross-country flight competition, it being ruled that a competitor must have flown a distance of at least 50 miles to be eligible for the first prize, and of 30 miles to be eligible for the second prize.

Prize.	Competitor.	Aeroplane.	Declared motor h.p.	Mls. Yds.
400	Cattaneo ...	Blériot M. ...	50 Gnome ...	399 310
200	Drexel ...	Do. ...	Do. ...	317 823
100	Grace ...	Farman B. ...	Do. ...	102 665

In addition to the above, the £200 prize for the longest aggregate flight made during the entire meeting by a monoplane was won by Signor Cattaneo on his Blériot flyer, with a record of 399 miles 310 yds. The prize of £200 for the same performance by a biplane was won by Mr. Cecil Grace on his Farman flyer, with a record of 102 miles 665 yds.

Starting Competition.

This test was open to competition on three days during the meeting. The final order of merit is set forth in the following table:—

Prize.	Competitor.	Machine.	Declared motor h.p.	Left ground in feet.
100	Radley ...	Blériot M. ...	50 Gnome ...	57
50	McArdle ...	Do. ...	Do. ...	59
25	Gilmour ...	Do. ...	35 Jap ...	101
10	Dickson ...	Farman B. ...	50 Gnome ...	102
	Cattaneo ...	Blériot M. ...	Do. ...	115
	Blondeau ...	Farman B. ...	Do. ...	118
	Cockburn ...	Do. ...	Do. ...	205½
	Grace ...	Do. ...	Do. ...	236

In addition to the above, there were three prizes of £20 each, one being awarded to the best performance of each day on which there was competition for the event. On Monday this prize went to Mr. D. G. Gilmour, who rose on his Blériot monoplane with an 8-cyl. Jap engine of 35 declared horse-power in 104 ft.; on Wednesday to Mr. J. Radley, who rose in 107 ft.; and on Friday to Mr. Radley, who rose in 57 ft. The special prize of £60 for the best starting performance during the meeting with a passenger over 18 years of age and weighing not less than 120 lbs. was won by Mr. Alec Ogilvie on his Wright biplane, who rose in 147 ft. The other performances in this section in order of merit are as follows:—Edmond, 214 ft.; Dickson, 227 ft.; Drexel, 243 ft.; Grace, 248 ft.

Delivery of Despatches.

This competition was with a view to test how near a man himself driving an aeroplane could drop an orange as representing a weighted despatch on a given mark:—

Prize.	Competitor.	Aeroplane.	Declared motor h.p.	Distance from bull's-eye.
100	Grace ...	Farman B. ...	50 Gnome ...	23 10
50	Ogilvie ...	Wright B. ...	27 Wright ...	62 0

As events proved, it was only possible to carry out this competition on one day, namely, Tuesday, when Mr. Cecil Grace's performance, reported above, won the daily prize of £20.

Weight-Carrying Competition.

The following is the result of the competition, which was to have been on four separate days, for making one complete circuit of the course without alighting, the minimum load carried to be 350 lbs. The only successful flying in this was on Saturday, when Mr. Cecil Grace carried 353½ lbs., thereby winning the £250 prize for the best performance of this kind during the meeting, and the £30 prize for the best effort made on Saturday. Earlier in the week Capt. Bertram Dickson and others had attempted this competition, but had broken up their machines in the attempt, even as in the similar event at the Bournemouth Meeting.

General Merit.

In addition to the foregoing prizes the first prize of £300 for general merit has been won by Mr. J. Armstrong Drexel, the second prize of £150 and the third prize of £100 are divided between Messrs. Radley and Grace, who receive £125 each. Winner of the first prize, Mr. Drexel, secures the Lanark Trophy, presented by Professor Archibald Barr, President of the Scottish Aeronautical Society. The *Glasgow Herald* prize of £250 for the British flyer whose performances are the most meritorious, special regard being given to flights of a nature which indicate useful developments in aviation, has been won by Captain Bertram Dickson. The *Glasgow Evening News* prize of £100 for the British aviator making the fastest time on a cross-country journey from the flying ground and back has been won by Mr. Cecil Grace. Of the prizes offered to competitors' assistants at the conclusion of the meeting, to be distributed among the mechanics of those aviators who, in the course of the various events in the programme, covered the greatest number of complete circuits of the course, the first of £60 goes to the assistants of Signor Cattaneo (254 laps), the second of £40 to the staff of Mr. J. A. Drexel (192 laps), the third of £20 to the staff of Mr. Cecil Grace (55 laps), and the fourth of £10 to the staff of Mr. J. Radley (37 laps).



THE SONG OF THE AVIATORS.

This is the song of those who dare,
The dauntless and the free,
Who fight the armies of the air,
As we have fought the sea.
Honour to those who on the wing
Thus earn the laurel crown,
The empires of the world shall sing
The songs of their renown.

We are the pioneers
Who seek the Air King's throne,
That you, in after years,
May claim it for your own.

The dauntless courage ours,
Whose purpose is unchanged,
Though Death and all his powers
Against ourselves are ranged.

We brave the Storm Fiend's might,
The tempest and the rains.
Night hears our throbbing flight,
Day sees our snowy planes.

You conquered heat and steam,
The lightning's lurid fire.
The ocean and the stream.
Are slaves to your desire.

But greater things we do,
And greater perils dare,
Who strive to win for you
The kingdoms of the air.

We glory in our task—
To make the winds your slaves,
And no reward we ask,
Save that of honoured graves.

DOROTHY M. HAWARD.



The tail of Champel's Voisin biplane at Lanark Meeting.

BOURNEMOUTH AND LANARK CONTRASTED.

SOME IMPRESSIONS AND REFLECTIONS.

By H. MASSAC BUIST.

WHEN at Lanark one could not but be surprised to discover comparatively how few in number were those who had also been present at the Bournemouth meeting. I have, therefore, pleasure in falling in with your suggestion and offering a few impressions, more particularly concerning points of contrast as between the two meetings, which between them complete the story of first class flying sport in Britain in 1910.

The first consideration is the course. At Bournemouth the ground was of an appreciable level character, though at the farther side of it from the spectators there was a great deal of country which was very unsuitable for landing. At Lanark, on the other hand, for the actual purpose of alighting, the surface was almost without exception entirely suitable; but the difference in the ground lay in the fact that it was rolling, undulating country much like that at Salisbury Plain, hence the remark of Mr. George Cockburn to the effect that in any case it should present few embarrassments to the biplanes as regards actual surface for starting, manoeuvring, and alighting. But there was this difference, namely, that the course at Lanark is flanked by mountainous country, while the very undulating nature of it presented a sore puzzle to some of the foreign competitors, Marcel Hanriot in particular telling me that he found the manner in which the hummocks and the hollows first banked up and then let loose the winds was an exceedingly trying experience for him, and this statement is the more remarkable to those who saw him fly because of the steady manner in which his machine slid through the air gave one the impression that it possessed a high degree of natural stability.

From the spectacular point of view Bournemouth had the advantage, in that onlookers were very much better situated for seeing the flying, particularly round the circuit marked by towers, than they were at Lanark. At Bournemouth practically everything occurred in front of the spectators. At Lanark those in the judges' box were the only lucky ones who perceived the aeroplanes passing by them on circuit work, for the ground was marked out for the course somewhat like the figure "6" with a straight tail. The sheds were accommodated where you begin to write that numeral, and the spectators and stands were situated along the first half of the down stroke; but the whole of the circuit was away from them, so that they had the machines in comparatively close view only round one mark tower. This disadvantage was further emphasised by the lie of the land, which was high at the starting end and right along to the beginning of the circular course, but which sloped away considerably towards the banks of the Clyde, which were at the farther end from the spectators, so that when the aeroplanes flew at heights of only 60 ft. or so from the ground they were out of sight for from a third to half of each lap. The very nature of the country, of course, afforded the best proof that could be asked for to illustrate the advance that has been made in aeroplaning during the last year. The organisation would have been severely censured for having dared to suggest such a course last year, for there is nothing of the favoured conditions of a plain about this ground. Instead, every man who went round it was really doing cross-country flying, the more so in that the tricks which the contour of the country caused the wind to play were aided and abetted by the proximity of a range of mountains. There was, however, only one spot on the course that was quite unsuitable for landing. This was a narrow ribbon that stretched across the furthestmost extremity of it, being a ditch running from the ground towards the Clyde, and only about 2 ft. 6 ins. wide. It had been filled up with straw, and planks placed on it, hence it is somewhat in the nature of irony that this one weakness should have been discovered in a manner that resulted in the smashing up of part of Captain Bertram Dickson's biplane when he was carrying a passenger and some sheet lead on a weight-lifting circuit. He was fain to come down because the Farman biplane would not lift any more, and his landing gear tripped in the seemingly smooth flat surface that was really a ditch. The incident was aptly described by Mr. George H. Mair as being the second occasion on which the Scots have played off the Bannockburn trick on the English.

The organisation was necessarily by way of being a composite affair which began passably well when all things are considered, and which ended splendidly, whether one cares to make allowances or not. The first point that struck the friendly critic was that in Scotland they do things in a far more businesslike fashion than we do in England. Nearly all the officials present on the ground at Lanark were there at work. There were no fancy people there except at suitable occasions as, for example, when practically no flying was taking place. Even so, distinguished persons, including

peers and peeresses, were "shooed" off the course like ducks or geese the moment anything in the way of business began. An instance of setting a fine example that we could not point to in a meeting of this sort in England was furnished by Sir Charles Scott, the owner of the land abutting on the course through which facilities had been granted by him for the purpose of completing the special railway arrangements. This gentleman so thoroughly appreciated the necessity for leaving the competitors and management in sole possession of the ground that he required a deal of persuading to take his wife on to the course during some idle moments, for fear it would be setting a bad example, and cause others to request like favours. It was a fortunate thing for the Scottish Aeronautical Society that it is on the best of terms with the Scottish Automobile Club, whereby it was able to secure the services of a great number of its officers, including the peerless Mr. Robert J. Smith for Clerk of the Course. He is the most impartial and ablest organiser we have in these Islands, either for motor trials or for aeronautical meetings. His grasp of detail is unrivalled. Utterly fresh though he was to the task, the manner in which one defect after another was remedied the instant it was detected became matter for marvel, for at Lanark they had nothing of the usual procedure down south of regretting a thing when it has happened and making a note against the next meeting. On every possible occasion, the need for a detail of improvement had merely to be realised for measures to be put into effect forthwith to perfect that particular feature of the organisation. The net result is that it is certain that at the next flying meeting in Scotland, whatever its character, as the result of the Lanark experiences it can be confidently assumed that the organisation will be ideal in every detail. Organisers are born, not made. It is our loss in the south that we have no great ones for these particular phases of enterprise, but at least we might imitate Mr. Robert Smith in one particular. He is absolutely no respecter of persons, as example the case when one of the stewards led a peer and peeress and other distinguished folk on to the course for a few moments. Mr. Smith at once enquired who these unauthorised persons were, and sent a message to the steward to bring them out at once himself. The steward hesitated, saying that he would part from his guests, and that a policeman could make the necessary intimation. That, however, was not good enough for Mr. Smith, who insisted on discipline, and said: "Either they come off the flying ground or I leave it." The steward had to obey. This is the right sort of thing. Again, at the Judges' box at Bournemouth there was a sort of delightful picnic party of persons who certainly were not assisting Major Lindsay Lloyd or the timekeepers in any way. Prominent people in the motor or aeronautical world, no doubt very good company, and particularly rejoicing in the privileges accorded them, but this sort of thing is not business, hence it was not allowed at Lanark. There were no receptions at the Judges' box in Scotland, and there should not be elsewhere. If I were asked to characterise the difference between our officials in the south and those in the north on the result of these two meetings alone, it would be necessary to say that in the south, particularly our highly-placed officials with no detail work to do, are far too prone to use their opportunities for bestowing favours on society folk by showing them how a flying meeting is run from various points of view. In the north they are so businesslike as to realise that if you break a rule of any sort, no matter in what exceptional circumstances, it is practically impossible to set a limit to other infringements.

The sheds, with corrugated-iron roofing, were the best that have been furnished at any meeting I have attended.

In regard to the actual flyers there were those who turned up at Bournemouth, but who, failing to make a mark there, did signally well in Scotland. The most prominent example is, of course, that of Radley, who seems suddenly to have learnt how to fly, and who has been engaged for a term of years by the Gibbs syndicate. The example is notable merely because the occurrence was in public circumstances. In most aeroplanists' careers there comes unexpectedly that hour wherein suddenly one passes from the "flapper" stage to that of accomplished pilotage. Radley himself had a very fast machine, and certainly he handled it well; but when one analyses the nature of his performances one cannot but form the impression that this young man would be well advised to be less excitable. Let him take the boy Marcel Hanriot's temperament, that is seemingly imperturbable, for a model, because we want our British flyers to remain on the active service list. At the finish of the meeting Radley had a miraculous escape owing to the sudden failure of his engine when attempting the altitude performance. The

speed tests that brought him into such prominence did not really call for such skill at piloting as did his cross-country flight, for example, which did not attract very much attention in the Press, but which was really a particularly fine effort, especially for a novice. He did it at a very fast speed, but the reason he did not figure very high on the list was that on the return journey he was facing the sun and utterly lost his way. That occasion was the first on which he had ever risen to a great altitude. He estimated his maximum height to be well above 1,500 ft., and nearly 2,000.

In considering the quality of the flying at Lanark one must remember the vastly more difficult conditions that prevailed there than those which obtained at Bournemouth, for not only was the wind of greater force, it was also infinitely more tricky by reason of the contour of the ground. Captain Bertram Dickson, who always strikes one as being a very competent flyer, did not distinguish himself from his rivals to anything like the extent that he contrived to do at Bournemouth. Mr. McArdle did some very fine cross-country flights, and so forth, but one noticed at Lanark how extraordinarily pronounced is the contrast between his mode of handling a Blériot monoplane and that of his partner in these matters, Mr. J. Armstrong Drexel. Mr. McArdle is quite the "jerkier" flyer of those on the ground at Lanark. When he rises it is as though he were hopping upstairs, the lift being a series of jerks. When he comes to make a landing your heart is usually near your mouth. Yet he is a fine flyer beyond question, though one feels he would run considerably less risk if he would impart a little more *finesse* to his methods. As for Mr. Armstrong Drexel, apart altogether from his remarkable performance in altitude on the same machine with which Léon Morane made the highest flight—and it was no mean effort—at Bournemouth, the young American gave some of the finest exhibitions of riding the wind in those intervals when others would not go out on account of the force of the breezes. Once, on Friday, when the wind was very strong, he said that for the only time during the whole meeting he felt that the machine had blown over to an angle from which he could not recover her. Happily he did manage to do so, hence all was well. On another occasion—but of this he thinks nothing—just as he was concluding a flight he became aware that the gear for warping one of the wings had failed; but again he landed without incident. As for his altitude performance, it is more remarkable than may at first appear from the mere data of the maximum height obtained. The last fifty feet took over four minutes to ascend, despite the fact that there was no lack of petrol. The difficulty was, of course, that one of the pilot's hands was absolutely numbed with cold, and that in the atmospheric conditions prevailing at that altitude the matter of carburation presented a very difficult problem. The risk of persisting was very great, for had the remaining hand lost the sense of feeling the pilot would have lost all control of his machine, which was difficult enough in any case during the oncoming darkness, when he could scarcely tell by glancing at the tips of his wings whether he was developing a list to one side or the other, to say nothing of the problem as to whether he was rising or falling. He did not desist, however, until he was compelled to do so by running out of lubricant. The rate of his glide is recorded in the barograph as being a sheer drop, for the needle marked a practically straight line from top to bottom with one dot to indicate where he put the Blériot monoplane from a gliding to a flying angle to effect a landing on a farm at Coppinshaw. It should be added that Mr. Drexel does not cover either his hands or his face when flying, for he says that if he does he cannot manage his machine properly, whereas other high flyers are wont to protect head, hands and arms against the tremendous cold that is experienced in the course of such performances.

As regards the really scientific phases of flying, which are not always brought out prominently at meetings of this sort merely because the very nature of the competitions is to please the populace as distinct from striving to bring out technical merit, quite one of the most excellent performances was that of Mr. Alec Ogilvie on the Short-built Wright biplane, with which he made the slowest circuit neither by the obvious trick of rising all the way nor through evading the spirit of the competition by taking the widest possible course, but solely by throttling down the engine until she would only just lift the machine. By this means he beat the Bournemouth record of the late Mr. Rolls with a mean speed of 24 and a fraction miles an hour, and it is worthy of note that the moment he had passed the finishing line he opened up the throttle and the biplane accelerated like a motor car until she had added over 30 per cent. to her speed. Of course, no machine on the ground could give gliding performances comparable with the beautiful cushioning effect of the Wright biplane, which does not have to be dipped prow lowmost in spectacular fashion to prevent it coming by disaster through falling backwards when the power is shut off.

Though the exigencies of space are imperative, it may be pointed out that whereas at Lanark there was no alighting competition there were introduced instead the first speed tests for a flying mile

and a flying kilometre. The ideal way to arrive at any scientific estimate of the speed of aeroplanes would be, of course, to have a triangular course; but in aeroplaning, as in motoring, it is essential in certain matters to appeal to the public. The public understands a straight-away mile and a straight-away kilometre. It is interested in it, so that it was obvious that sooner or later such a test would be started. Thanks to the enterprise of Mr. A. V. Ebbelwhite, the Lanark meeting was the first at which it was put into practice. There was a favourable following wind to help the speeds set forth in detail elsewhere in this issue, but this system of records, of course, cannot continue to be made under these circumstances, for it is plain that if anyone wants to surpass the Lanark performances in France, for example, all that would be necessary would be to wait for some day when there shall be a faster following wind than that which blew at Lanark on Saturday last. It may be said that the solution of the difficulty lies in making the aeroplanist take an out-and-return course, the mean speed only to count. That, however, would not be satisfactory in a real competition, for you would naturally have to allow the man to overrun the mark by a very wide margin on the outward tack that he might effect the turn and have got up full speed again before passing the starting-line on the homeward journey. If we work it out in practical fashion, it would be very prompt management indeed that would be able to despatch the machines at intervals of five minutes so that every competitor would have a fair chance, because there would be only one man in the air at once so that no question of propeller wash or what not could possibly be raised. Supposing there were only a baker's dozen of competitors and each went off at an interval of five minutes, an hour would have elapsed between the starting of the first man and the setting off of the last one. But we are to expect in little tests of this sort which can be indulged in by almost any flyer who can get off the ground, that there will be dozens and dozens of competitors at meetings; and in this country, at any rate, the wind is rarely travelling in the same direction and at the same speed for an hour at a spell. Plainly, whatever system may be adopted for conducting such tests in the future it must be one that will enable them to be carried out on practically any day in the year, for as each season passes it will be more and more difficult to arrange for aeroplaning performances "weather permitting." Those two words will very soon cease to appear on our programmes.

Take it for all in all, the Scottish meeting has been a splendid success, not the least interesting part of the organisation being the manner in which the prize money was divided into a great number of small amounts, which had the desired effect of producing a maximum amount of flying, so that—for all that Mr. Cecil Grace in his present mood considers the biplane to be unsuitable for competition in 1910, as instance his speech at the banquet given at the close of the meeting—nevertheless, his performances on a Farman biplane netted a larger amount of prize money than fell either to Mr. J. Armstrong Drexel or to Signor Cattaneo. Doubtless Mr. Grace was not aware of this phase of the situation when he spoke, but was referring only to speed performances at this particular stage of development of the aeroplane. It is curious, of course, to note how utterly people's judgments are deceived as each stage of aeroplane progress is revealed. Last year they would hear of nothing but the Farman biplane; this year it is the Blériot monoplane or nothing, and at each of those periods the curious thing is that they never seem to look ahead. Does it never dawn on them that no one type of machine, whether it is a Wright, a Farman, a Curtiss, a Blériot, an Antoinette or a Voisin, can ever, or will ever, lead permanently or even for long? The game of the competitor should be not to secure the current type but the coming one. It is merely the particular combination of a powerful light engine, namely, the Gnome, and a proportionately small monoplane, the cross-Channel Blériot type, that has given quite a new character to the exhibitions of flying that we are seeing this year. We perceive these little machines literally leap off the ground, and in like fashion we see them well-nigh dart to earth. The one spectacle which the Scottish folk were robbed of, and which is, perhaps, the very latest form of "aeroplaning," is that of the superbly effective spiral descents which were made by Léon Morane at the conclusion of his high flights at Bournemouth. On the other hand, at Lanark there were afforded for a few brief moments the spectacle of the prince of flying machines for sheer beauty of flight, namely, M. Küller's Antoinette monoplane fitted with an E.N.V. engine and wooden Chauvière propeller.

A final word as to the total amount of flying at the two meetings. There are approximately thrice as many figures in Mr. A. V. Ebbelwhite's time books for the Lanark meeting as the total of those that fell to be entered at the Bournemouth one. That furnishes some idea of the great good fortune which attended the Scottish meeting, which undoubtedly is the more important of the two in its relation to aeronautical history, if only for the fact that a world's record for high flying was established over those northern moorlands.

BLACKPOOL FLYING CARNIVAL—continued.

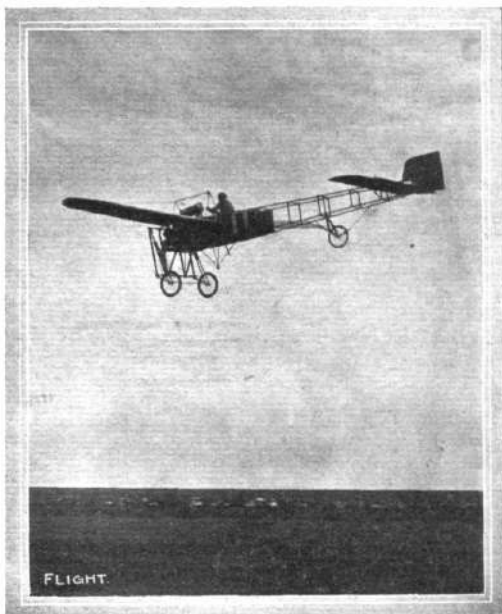
By OUR SPECIAL COMMISSIONER.

Exhibition Flights.

WEDNESDAY was remarkable for the magnificent effort made by Loraine, which was briefly recorded in last week's issue, in flying to Cemlyn in Anglesey, with one stop at Rhos, near Llandudno. It was generally understood that Loraine was only waiting for favourable weather in order to put in some long distance flying, the opinion being held that he would probably try to reach some point on the Welsh coast, since he had abandoned the idea of flying to Douglas. His mechanics were very busy on Tuesday overhauling the machine and dismantling the engine. A start was made at 6.30 a.m. on Wednesday, just as the sun was breaking through the mist, and after making a circuit of the aerodrome to test the working of the motor, Loraine left in the direction of Liverpool, followed post haste by a car containing his mechanics and spares. Nothing further was heard of him until just before noon, when news came through that he had reached Rhos safely in time for breakfast. This was not to be the only cross-country flight, however, as Grahame-White came out at 10.50 a.m. with the intention of making a trip to Morecambe. He journeyed round the back of Blackpool, and then struck the coast, keeping at a height of about 1,000 ft., and making his first descent near Fleetwood Barracks. Staying here only a few minutes, he made off for Morecambe, and, skirting that town, crossed the Bay to Barrow, alighting near the dirigible shed there at noon. After a rest of ten minutes, the return journey was commenced, and the aerodrome reached without mishap at 12.50 p.m. This flight counts for the £1,000 prize offered by the *Daily Mail* for the greatest aggregate distance flown across country, the competition closing on Sunday, August 14th. The knowledge that Paulhan is making every effort to capture this prize has caused Grahame-White to increase his total on every possible occasion, and his final success in this competition would be most acceptable to his host of admirers and to the whole English-speaking race. In the afternoon nothing was done until half-past four, when Grahame-White came out for about ten minutes. A few minutes later he was up again, with a passenger, and as he finished Tetard commenced, and was up for a quarter of an hour. Until 6.30 p.m. only Grahame-White and Tetard gave exhibitions, but at that time Harding came out on the J.A.P. monoplane, and succeeded in flying three laps very prettily. Some time later he duplicated this performance.

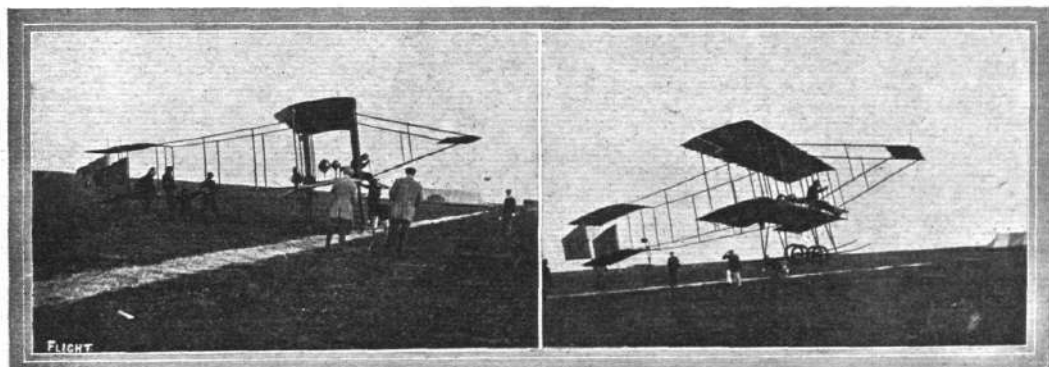
The outstanding feature of Thursday's flying was the early morning journey to New Brighton which Grahame-White made. Leaving the aerodrome at 6.45 a.m., he went off in the direction of St. Anne's; trouble caused by the breaking of the counterbalance of one of the valves necessitated his descent at that place, a telephone message bringing aid in the shape of his assistants. The repair prevented his departure until 9.45 a.m., and he reached New Brighton a few minutes before 11 o'clock, landing in the grounds of the Tower. The return journey occupied only 27 mins., and as the distance is 24 miles direct, this meant very fast travelling. Nothing of note occurred during the afternoon, the usual exhibition flights being carried out successfully.

Friday opened wet and blustering, with little prospects of flying.

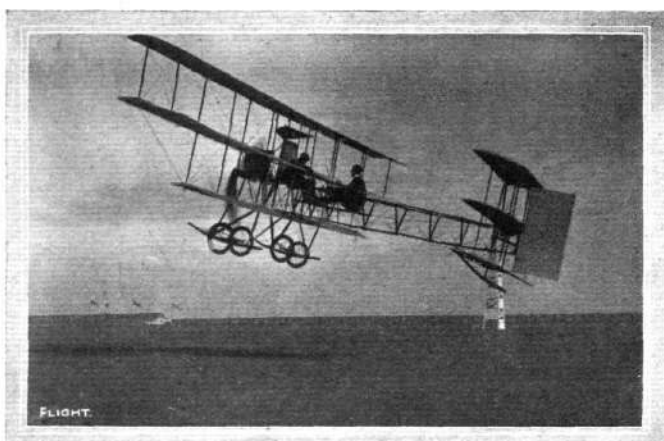


Harding in full flight on his J.A.P. monoplane at Blackpool.

The rain ceased about noon, but the wind was still blowing over 30 miles per hour and showed no signs of abating, so that Friday was a blank day, no flying at all being done. With only two days left before the close of the competition for the *Daily Mail* prize, Grahame-White set himself the task of flying 100 miles each day, and on Saturday morning succeeded in making flights to New Brighton and Morecambe, adding 110 miles to his total. The afternoon was ideal for flying, and exhibitions were given during the course of the afternoon by all the aviators. Roe, whose ankle has not recovered from the accident on Tuesday, and who has to use a bicycle to get about, made several flights, his success being deservedly popular. Harding also put in a flight of four laps, coming down owing to the customary engine troubles. The most interesting feature of the afternoon was the exhibition of bomb-throwing given by Grahame-White. The outline of



"GETTING-OFF" CONTEST AT BLACKPOOL.—Grahame-White, on his Henry Farman, takes his turn. On the left the machine is ready, Mr. V. Ker Seymer marking the position of the axes; and on the right the Farman is in the air, the officials, Col. Grantham, Mr. Ker Seymer and Mr. Rutter being seen rushing to mark the exact spot of leaving the ground. Grahame-White's best of 20 ft. 9 ins. only just missed the world's record.



A. V. Roe carrying a passenger last week on his triplane at Blackpool Aerodrome.

a battleship 400 ft. long and 80 ft. beam had been white-washed on the ground in lines about 2 ft. wide. Bombs, consisting of paper bags holding about a pound of flour, were made up and supplied to the aviator. Rising to a height of 200 to 300 ft. the first bomb was thrown, missing the battleship by a few yards. The next two shots, however, were both successful. After coming down to see the results, he took in a fresh supply of ammunition, and then rose rapidly to a height of 1,000 or 1,200 ft. From this altitude he succeeded in hitting the target with each of the three shots, making excellent practice. After some passenger-carrying flights by Tetard and Grahame-White, the latter set off again at 6.30 p.m. in the direction of Liverpool, in order to further increase his aggregate. His destination proved to be New Brighton, and the trip was without incident. New Brighton seems to be a popular spot with Grahame-White, as it welcomed him no less than three times on Sunday, twice in the morning and once in the afternoon. Steady flying was the order of the day in the aerodrome, Tetard, Roe and Harding all contributing.

Competitive Flights. August 15th to August 30th.

For the concluding week of the meeting, a strong programme had been arranged, including the majority of the competitors from Lanark. Several of these, including Champel, Chavez and Kuller, were unable to appear owing to accidents to their machines. The actual entries are as follow:—

Aviator.	Type.	Make.	h.p.	Motor.
Grahame-White	Biplane	H. Farman	50	Gnome
Grahame-White	Biplane	H. Farman	50	Gnome
Cattaneo	... Monopl.	Blériot	... 50	Gnome
Drexel	... Monopl.	Blériot	... 50	Gnome
Grace...	... Monopl.	Blériot	... 50	Gnome
McArdle	... Monopl.	Blériot	... 50	Gnome
Radley	... Monopl.	Blériot	... 50	Gnome
Roe	... Triplane	Avro	... 35	Green
Tetard	... Biplane	Sommer	... 50	Gnome
Harding	... Monopl.	J.A.P.	... 35	J.A.P.
Blackburn	... Monopl.	Blackburn	35	Isaacson
Lumb	... Monopl.	Lumb	...	J.A.P.

With the exception of Cattaneo's, all the machines were on the ground on the opening day, although several were not ready for flight. The prize list and programme of events is totally different to that arranged for the first week, and the following competitions are open:—

Longest Distance.—Daily prizes of £50 and £20, with grand aggregate prizes of £150 and £50 at conclusion of meeting.

Time in the Air.—Prizes same as in above.

Speed (5 laps).—Daily prizes of £20 and £10.

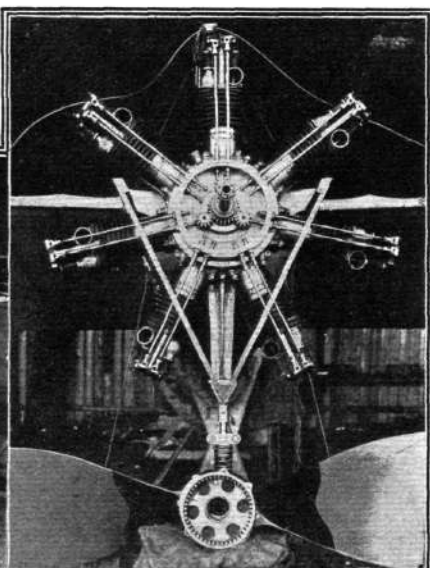
Altitude.—Daily prize of £50. A prize of £100 will be awarded at the conclusion of the meeting to the competitor making the highest individual flight.

Starting Competition.—Prizes of £20 and £10.

Bomb-Dropping Competition.—Prizes of £20 and £10.

Altogether the prize money amounts to £2,000, and variety has been introduced as far as is possible. Of the competitions, the first four are daily, whilst the starting and bomb-dropping competitions are taken on alternate days throughout the week.

The weather on Monday was such as Blackpool is prone to, brilliant sunshine being tempered by a strong breeze which precluded the possibility of flying taking place. About 4 o'clock the wind seemed to be dying down, and the crowd began to cross over from the hangar enclosure to the aviation ground in anticipation of flights commencing. It was 5 p.m. when Grahame-White appeared, and the anemometer was registering 29 m.p.h. with gusts up to 35 m.p.h. as he set off. The flight, although brief, was magnificent in its conception and daring, the machine, buffeted by the wind, rocking and swaying like a piece of paper. After flying one-and-a-half laps, Grahame-White descended to the great relief of everybody. Immediately afterwards he announced his intention of going for the



THE BLACKBURN LIGHT MONOPLANE WHICH ARRIVED AT BLACKPOOL LAST WEEK.—On the left the machine, showing details of the landing chassis and propeller, is seen in its shed; and on the right is the 35-40-h.p. Isaacson engine with which it is fitted, showing reduction gear (2 to 1) and internally cut gear-wheel attached to propeller.

"get-off" competition, but some delay ensued in obtaining the necessary measuring tapes, and the start did not take place until 5.40 p.m. In this competition the aviator must fly at least 100 yds. after getting off, and is allowed two attempts. Facing the wind, Grahame-White got off in 24 ft. 7 ins. and 26 ft. 2 ins. for his two official attempts. In attempting to put up a record for this after his official attempts, he succeeded in getting off at 20 ft. 9 ins. Roe was the only other competitor to put in an appearance, getting on to the starting line at 7 o'clock. His attempts were both abortive, the first owing to his not rising, and the second because he did not fly the necessary 100 yds. In this latter attempt he rose after travelling 83 ft. 6 ins. Grahame-White was out again at 7.30 p.m., but did not manage to better his previous figures, and with this the day's flying ended.

Tuesday.

The gale of the previous day had abated to a great extent, and as a consequence a large crowd assembled on the aerodrome with every expectation of a good day's flying. Drexel on the two-seated Blériot and Roe arrived simultaneously on the ground at 3.15 p.m., Roe getting off first for a short flight up and down the ground and then coming down. Drexel, who had entered for the duration and distance prizes, followed immediately after Roe, and rising prettily, began to reel off lap after lap with his accustomed skill, although it was apparent from the behaviour of the machine that the wind was inclined to be gusty and troublesome, and along one section of the course he travelled crab-fashion, with the centre line of the machine oblique to the line of travel. Cattaneo's machine was next in the aerodrome, but the famous aviator showed no sign of starting. Drexel came down at 3.35 p.m., his official time being 19 mins. 23½ secs. and the distance 10 miles. Grahame-White was in evidence a few minutes before 4 o'clock, rising immediately and flying low round the aerodrome. The wind was still tricky, the machine needing careful handling, and Grahame-White came down at 4.23 p.m. Ten minutes later Cattaneo was off, making a splendid start and rising rapidly. Flying very steadily at a height of about 200 ft., he gave a very graceful exhibition of flying, *vol planing* after a flight lasting 10 mins. Roe was next up, making a short passenger flight, and then Grace's Blériot was wheeled into the aerodrome. Tetard followed Grace, going for the duration prize, and making a flight of 37 mins. Grace started a few minutes after Tetard, and his essay was watched with great interest, owing to his previous ill-luck with this machine. He rose easily, however, and began to rise rapidly, reaching a height of about 700 ft., at which altitude he was evidently trying the machine, making glides and manoeuvring the machine easily. When Roe went off a little later there were three machines in the air, singularly enough a monoplane, a biplane and a triplane. Roe's flight, although comprising only two laps, was heartily applauded. As Roe landed, McArdle rose and proceeded to tear round the course at a great speed, swinging wide at the pylons, but keeping remarkably low. A very pretty spectacle was made by the three machines flying at different altitudes, Grace being highest and Tetard lowest. Grace made a successful landing at 5.41 p.m., after flying for 34 mins., 3 mins. less than Tetard, who came down at 5.37 p.m. McArdle landed at 5.44 p.m., just as Cattaneo set off, rising so rapidly as to give the idea of the machine sitting on its tail. Four minutes afterwards Drexel's Blériot was brought into the aerodrome, and thus made the eighth machine to be seen, an unusual spectacle as far as Blackpool is concerned, and one appreciated by the crowd. Cattaneo, who had reached an altitude of considerably over 1,000 ft., treated the spectators to a brilliant *vol plane*, switching on his engine when about 30 ft. high. Grahame-White, with a passenger, and Drexel set off simultaneously at 6 o'clock, but were not in the air for more than a few minutes. Grace was next out for the altitude prize at 6.6 p.m., followed by Grahame-White, who was carrying a passenger. After reaching an altitude of 800 ft., Grace found the wind too variable and gave up his attempt for the altitude prize. At 6.30 p.m. the speed competition started, there being only two entries, McArdle and Cattaneo, the distance being three laps. McArdle went off first,

only one competitor being allowed in the air. The wind by this time had freshened and as the course is only one mile round fast times were not expected. McArdle succeeded in doing three laps in 3 mins. 36½ secs., whilst Cattaneo's time was 3 mins. 36 secs. At 7 o'clock the bomb dropping competition was commenced, Roe, Grahame-White and Tetard entering. Roe started first, but kept very low, and in making a turn to come down in the centre of the aerodrome his wing touched ground, bringing the machine over on its side, but doing little damage. Each aviator had three bombs to throw, and Grahame-White ran out winner, showing considerable ability in hitting the target. This competition ended the official flights, but the resurrected "Blue Bird," belonging to Mr. Grahame-White, came on to the ground with Mr. Gresswell up. Before starting off, however, Radley made an attempt to fly with the machine, without any success. Afterwards Grahame-White succeeded in rising off the ground, covering a few hundred yards at a height of 4 or 5 ft. The day's awards are as follows:—

Duration.—Grahame-White, £50, 51 mins. 18½ secs.; Grace, £20, 34 mins. 6½ secs.

Distance.—Tetard, £50, 17 miles; McArdle, £20, 16 miles.

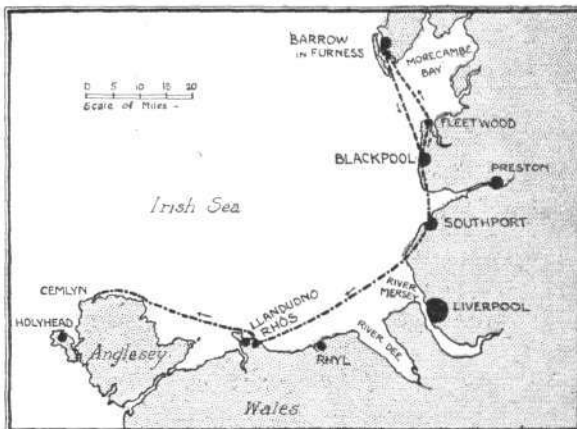
Speed.—Cattaneo, £20, 3 miles, 3 mins. 36 secs. (50 m.p.h.); McArdle, £10, 3 miles, 3 mins. 36½ secs. (49.86 m.p.h.).

Altitude.—Grace, £50, height 1,270 ft.

Bomb Dropping.—Grahame-White, £20; Tetard, £10.

ROBERT LORRAINE'S OVERSEA FLIGHTS.

IN our last issue we were able to briefly chronicle Mr. Lorraine's splendid flight from Blackpool to Rhos on Wednesday of last week. Later in the same day he started off once more, intending to reach Holyhead, the next station on his way to Dublin. After flying for a little over 2 hours he found that his petrol supply was running out, and decided to come down at the first suitable place. This was a farm near Cemlyn, where the biplane was stored for the night. On



Sketch map, showing the cross-sea flights made on the same day last week by Robert Lorraine and Claude Grahame-White.

Thursday a strong wind prevented any flying, but on Friday evening a slight lull induced Mr. Lorraine to start with the intention of getting to Holyhead. The engine, however, was not working at its best, and the strong wind prevented Mr. Lorraine from rising sufficiently in order to clear some rough ground. The chassis of the machine collapsed, and the whole machine was considerably damaged by the shock, but Mr. Lorraine escaped unhurt.

PARIS TO LONDON.

Moissant Flies the Channel with a Passenger.

JUST as we go to Press news comes to hand that for the fourth time the English Channel has been crossed, and this time by a monoplane carrying two persons. On Tuesday afternoon at five o'clock M. Moissant left Isy, near Paris, announcing his intention of flying to London. He was accompanied by his mechanic, and without more ado, heading for Amiens, landed there at half-past seven. He decided to stay there for the night, but early the next morning he was astir, and at a quarter-past five was in the air and making for Calais; there he descended at 7.15 a.m. A rest of two

hours and a half was then made, and meanwhile the faithful mechanic replenished the tanks, and made all preparations for the cross-Channel trip. At a quarter to eleven all was ready, and the Blériot two-seater once more took the air. A fairly stiff breeze was blowing, driving the aviator a little off his course, so that, instead of striking the English coast at Dover, as he hoped, he passed over Walmer. Owing to a strong wind then encountered it was decided to land, and a safe descent was made at Willows Wood, near Tilmanstone, about 7 miles from Dover, the time then being 11.25 a.m.

BRITISH NOTES OF THE WEEK.

Mr. C. Grahame-White and Mr. A. V. Roe Going to America.

MR. J. RADLEY, who, as we announced a fortnight ago, will sail for America early next week, will not be the only British aviator to visit the United States, as Mr. Claude Grahame-White, who has his eye on one or two of the big prizes, will also sail for New York in a day or two. Both will represent Great Britain in the Gordon-Bennett Race in the U.S.A. Mr. A. V. Roe is also going to America to take part in the Harvard meet from September 3rd to 13th.

Mr. Ferguson Flies Three Miles.

LAST week we were able to briefly note Mr. H. G. Ferguson's three-mile flight at Newcastle, co. Down, and since then we have received further details from Mr. Ferguson himself. In his attempt during the previous week the aviator had been greatly troubled by "air pockets," and sustained many buckled wheels in consequence. On Monday of last week, after he had considerably lightened his machine, Mr. Ferguson determined to make a final trial. The conditions were favourable in the evening, and he proceeded to Dundrum so as to get a course of over 2 miles in length. The machine rapidly rose to 40 ft., but in an endeavour to get clear of the "pockets" Mr. Ferguson continued rising to 80 ft. At Newcastle the people ridiculed the idea of a successful flight, but as soon as the murmur of the motor in the air was heard everyone rushed to a point of vantage. Over the Slieve Donard Hotel Mr. Ferguson passed at a speed of between 35 and 40 miles per hour, and when he had covered a distance of 3 miles he came down. Then he was "chaired" back to his headquarters. By this flight Mr. Ferguson won the prize of £100 offered locally. His monoplane is covered with Dunlop fabric, and the J.A.P. engine with which it is fitted drives a Clarke propeller. With these exceptions the machine is entirely Mr. Ferguson's own work, and he is to be congratulated on the success which has attended his efforts. As soon as possible he will return to Magilligan Strand to continue his practice there.

Mr. Fletcher Tries a Biplane.

ON the evening of the 8th inst. Mr. C. A. Fletcher had a trial with his new biplane on the Manchester Racecourse at Castle Irwell. After one or two preliminary runs along the racecourse he got the machine to rise, but in attempting a sharp turn one of the wheels came in contact with the ground and was buckled. This brought the whole machine down with a smash, and several parts were damaged, but they can be quickly repaired. This latest machine is of the Farman type, but entirely built in Manchester and fitted with a 4-cyl. Empress engine.

"Daily Mail" Cross-Country £1,000 Prize.

ON Sunday night the competition ended for the £1,000 prize offered by the *Daily Mail* for the best cross-country total achieved during the preceding twelve months, and on the last two days both Paulhan and Grahame-White had been busy adding to their score. We have dealt elsewhere with Mr. Grahame-White's trips from Blackpool, and so need not refer in detail to them here. M. Paulhan

added to his score by repeated trips to Chartres and back, from his headquarters at Buc. On Thursday he twice made the double journey, on Saturday he completed it three times, and on Sunday twice, and at the end he returned his record to date as of 855 miles, while Grahame-White's total was put at 842 miles. These figures must be considered as largely hypothetical, however, until they have been checked by the Royal Aero Club and the Aero Club of France.

Willows Presentation Fund.

MR. W. J. POTTER, of the Aerial Manufacturing Co. of Great Britain and Ireland, writes us to the effect that he has proposed and taken steps for the establishment of a fund wherewith to make a presentation to Mr. Willows as an appreciation of his recent successful flight from Cardiff to London and incidentally with a view to affording him some kind of material encouragement in his undertaking to sail from London to Paris. Mr. Potter informs us that Mr. D. A. Adams, M.P., has consented to act in the capacity of Chairman and Lord Ninian Crichton-Stuart in that of Treasurer. Contributions are payable to either of these gentlemen or to the Willows Presentation Fund at the Crystal Palace branch of the London and South-Western Bank, Westow Hill, Upper Norwood. It is suggested that with the proceeds Mr. Willows will be asked to construct, within three months if possible, a 200 ft. dirigible of his own design and under his complete supervision in every detail; that it be presented to him publicly, and that his first flight therewith be London to Paris and back.

Flying Meeting at Burton.

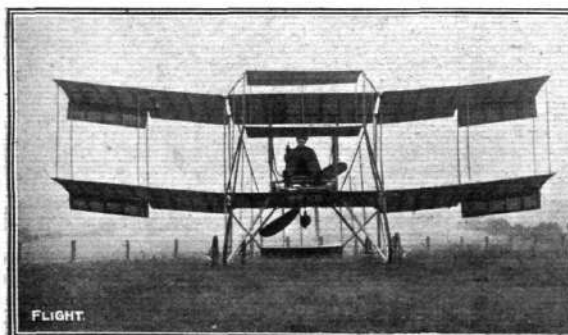
A FLYING meeting is being arranged to be held at Burton-on-Trent from September 12th to 17th. The flying will be over Bass's Meadows, and the prize money will amount to £2,000. It is stated that it is expected that McArdle, Drexel, Cattaneo, Radley, Cody, and Chavez will be among the competitors.

Another Flyer at Doncaster.

EARL FITZWILLIAM will not be the only experimenter at Doncaster, as Mr. E. Hoyle, a well-known Huddersfield motorist, is taking his British-built machine, of the Sommer-Farman type, there in a few days in order to practise with it.

Mr. Chanute and Newspaper Reports.

MR. T. O'B. HUBBARD, the Secretary of the Aeronautical Society of Great Britain, writes us in regard to a report published a little while ago in the papers that Mr. Chanute had had a fall from an aeroplane while flying at Carlsbad, and had been removed to the American Hospital at Paris. After a large amount of inquiries, Mr. Hubbard has received a letter from Miss Elizabeth C. Chanute, dated July 30th from Paris, who writes:—"I have opened your letter of July 29th to my father. He has met with no accident, but with an acute attack of broncho-pleuro-pneumonia. He is quite too weak to bestow attention upon even such kind invitations as yours, but hopes to recover within two or three weeks, so as acknowledge the touching inquiries of his friends."



A SCOTTISH-BUILT BIPLANE.—This is the work of "Gibson's Aeroplanes" of Leith. Mr. John Gibson, its designer, in sending us the photographs, writes: "The machine which we are at present practising with promises well, rising readily, but none of us are capable of handling her efficiently as yet. Of course, we have had our engine troubles and a few smashes, but all the fault is either with the engine or with our own inexperienced handling, which time will remedy. The machine itself is all right, and I believe the first Scottish-built aeroplane to leave the ground. My son, age 19, can handle her best; he appears in photos."

FOREIGN AVIATION NEWS.

French Military Aeroplane Competition.

It is reported from Paris that the French Minister of War proposes to start a competition among officers for a new military aeroplane which shall supersede those at present in use. One of the chief points to which attention will be directed will be the facility with which the machine can be taken to pieces and re-erected.

Military Flyers in France.

THERE was an unusual amount of activity among the French military flyers on the 11th inst. Lieut. Remy flew from Mourmelon to Douai, a distance of 170 kiloms., stopping midway at the fort of La Fere. Early in the morning Lieut. Fequant, with General Maunoury on board, and Lieut. Cammerman, with Lieut. Villerme beside him, set off from Nancy, and flew to Moucel on the German frontier. After circling above the town they returned to Nancy. Later in the day Capt. Marie and Lieut. Fequant on one machine returned to Mourmelon, stopping at St. Dizier; while Lieut. Cammerman, accompanied by Lieut. Villerme, flew along the frontier to Mezières, landing *en route* at St. Michiel in order to repair a slit in the covering of one of the planes.

On the previous day Lieut. Mailfer, with an artillery officer as companion, received orders to reconnoitre a position 12 kiloms. from Mourmelon, where it was supposed that the enemy had a battery. After a flight of 25 mins., mostly at a height of 500 metres, the officer landed, and gave a most satisfactory report, which would have enabled the artillery to have defeated the enemy.

French Aerial Commander-in-Chief.

NO doubt inspired by all he has seen and experienced, General Brun, the French Minister of War, is rapidly getting the flying branch of the French Army thoroughly organised. He has just appointed General Roques to be Commander-in-Chief in regard to all that has to do with aeroplanes, and has also decided that in the next budget £80,000 will be asked for to purchase new machines. In addition to the three present military aviation centres, three more will be added, at each of which there will be a school of instruction.

Ehrmann at Pordenone.

HAVING satisfactorily repaired his Blériot monoplane, Ehrmann made a flight of 20 kiloms. over the country round the Pordenone aerodrome, near Milan, on the 9th inst. He also made several flights on Thursday week before the Duke of the Abruzzis. Cagno was also flying on his Henry Farman machine, and carried a couple of passengers.

Doings at Mourmelon.

BEYOND the cross-country flying of the military aviators, there has been little doing at Chalons Camp, except the tuition of various pupils. At the Antoinette school, Count Robillard has qualified for a pilot's certificate, as also has Sée and Ravetto at the Voisin school, and Glorieux at the Sommer school.

Wynmalen Among the Trees.

LEAVING Mourmelon with the intention of flying to Nancy on the 10th inst. on his Henry Farman, Wynmalen was overtaken by

the fog and rain when flying at a height of 750 metres. He descended to 50 metres, with the intention of landing, but finding the ground unsuitable, determined to go on. Before he could get up again, however, he found himself entangled in the top of some poplar trees. Fortunately, he was seen and soon rescued, without having a scratch. Later, the mechanics arrived and took the machine to pieces, and transported it to Chalons on a motor car.

Bielovucic Flies to Amiens.

ON Monday, Bielovucic, mounted on his racing Voisin, flew from Mourmelon to Amiens, stopping at La Fere on the way for lunch.

Lieut. Bellenger is Tripped Up.

WHILE preparing to fly on his Blériot from Verdun to Nancy on the 10th, Lieut. Bellenger smashed the chassis of his machine through colliding with a stake fastened in the ground over which he was taking his preliminary run. The wheels and the propeller were broken, but the aviator escaped unhurt.

De Zara Flies before Royalty.

BEFORE an audience which included the Princess Lætitia Bonaparte and the Duchess of Aosta, Sig. de Zara made a flight of 40 minutes on his Henry Farman machine at Padua on the 11th inst. He also made two trips with passengers, Count Fossati and M. Raineri, the latter being carried for 20 kiloms. at a height of 100 metres.

Cross-Country Flying by Latham.

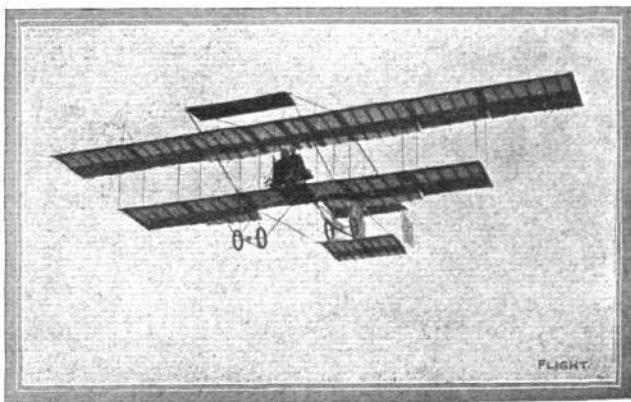
LATHAM also decided to try and improve on his record for the *Daily Mail* prize, and starting off from Chalons on Friday, he flew to Issy, passing *en route* over the French capital. He completed the 180 kiloms. in 3 hrs. 10 mins. On the following day he flew to Chartres, and on Sunday went on to Deauville, and from there to Havre. Not being able to get near the leaders in the *Daily Mail* contest, he was back at Issy on Monday, and the next morning at six he left for Amiens. He came down at Breteuil for lunch. Starting off again he had to stop 27 kiloms. short of his destination owing to trouble with his propeller. This was not put right until too late to continue the journey to Amiens that day, but early on Wednesday morning he was off again and landed safely at Amiens. He then proposed to fly on to London in stages, but after making three rounds of the aerodrome, by way of a trial, he collided with a tree and smashed his machine.

Brookins has an Accident.

WHILE descending from a height of 700 ft. in his Wright biplane at Ashbury Park, New York, Walter Brookins met with a serious accident on the 10th inst. He had got to within 40 ft. of the earth when in endeavouring to steer clear of a group of photographers, he turned sharply, and caught by the wind, his machine capsized. It fell on to some of the spectators, who were hurt, and Brookins was picked up unconscious and badly injured.



Henry Farman and his three passengers with whom he recently flew.



Henry Farman during his recent flight on his biplane with three passengers besides himself.

FLIGHT MEETINGS ABROAD.

Johannisthal Meeting.

WEDNESDAY of last week was a splendid flying day at Johannisthal, but unfortunately the proceedings were marred by a serious accident. Heim, one of the Wright flyers, had attained a height of 112 metres in the altitude competition, and had descended to 60 metres, when apparently one of the propellers fouled the tail, and broke it. The machine turned over three times, and the aviator was thrown out, but fell clear of the wreckage. He was taken to the Britz Hospital, where it was found that he was suffering from internal injuries. The two longest flights during the day were by Jeannin, 1 hour 54 mins., and Brunnhuber, 1 hour 50 mins., while Gorrissen twice flew outside the aerodrome, once over Rudow and the second time over Rixdorf. Dörner made two attempts for the weight lifting prize. In the first he carried 171½ kilograms., and in the second the load was 10 kilograms. more.

On the following day, Gorrissen, on his Euler machine, flew over to Britz and visited Heim in the hospital. Wiencziers made a ten-minute trip, and Thelen carried a load of 210 kilograms. to a height of 377 metres. Friday was practically a blank day owing to trouble between the police and the aviators. The former issued an order that no one would be allowed to pass in and out the enclosure without an official armlet. The aviators refused to submit to this, but ultimately matters were smoothed over by Capt. Engelhardt, who afterwards made a flight of five minutes' duration, and also carried a passenger for 20 mins. Jeannin also made a couple of short trips. So far as flying was concerned, Saturday was uneventful, the continuous rain preventing any of the machines from being brought out. The next day was the last, but only Brunnhuber and Laitsch were flying, the former for 63 mins. and the latter for 59 mins. The height and weight carrying prizes were both secured by Thelen, Capt. Engelhardt being second and Dörner third in the latter competition.

Flying at Mantes.

ALTHOUGH the number of flyers present at Mantes is not large, there is excellent variety, and on Sunday, the opening day, the four who were ready—Morane (Blériot), Thomas (Antoinette), Renaux (M. Farman), and Van den Born (H. Farman)—each gave good displays. The longest was by Morane, who, on his Blériot, flew for 1 hr. 7 mins., while Thomas, on the Antoinette, was up for

53 mins. and Renaux, on the Maurice Farman, for a little under three quarters of an hour. Very little flying was possible on Monday, owing to a strong wind, but Thomas made a trip of 20 mins., and Morane, during a 10-min. flight, went up to 1,000 metres. These two and Paillette, who made a 10-min. trial on the Sommer, were the only ones to venture out.

The Havre-Trouville Meeting.

THE entry list published for this meeting contains 41 names, including that of Mr. S. F. Cody. Among the entries are 4 Antoinettes, 11 Blériots, 5 Hanriots, 5 Sommers, 3 Henry Farmans, 2 Voisins, 2 Savarys, 2 Breguets, 1 each Tellier, Demoiselle, De Feure, Obre, Goupy, and M. Farman.

From the 25th to the 29th inst. competitions will be held in the aerodrome at Havre, and the 30th August and 1st September will be occupied with flights across the Seine estuary to Trouville, and further competitions will take place in the aerodrome between Trouville and Deauville from September 2nd to 6th. Prizes to the value of £10,000 will be offered.

Swiss Aviators in Competition.

AT the flying meeting which opened at Geneva on Sunday two Dufaux machines were seen in competition for the first time and the longest flight of the day was made on one of them. This was of 1h. 1m. 27½s. duration. The speed prize was won by Audemars on his Demoiselle. Amerigo, on a Blériot, took the height prize, although he only reached 30 metres, and Dufaux secured the starting prize, getting off the ground in 60 metres. No flying was possible on Monday because of the wind.

A Flying Week at Harvard.

EXTENSIVE preparations are being made by the Harvard Aeronautical Society for the flying meeting which will be held from September 3rd to 15th, over a tract of land about 500 acres in extent, bordering on Dorchester Bay and between Neponset Bridge and Squantum. It has been leased for five years, and named Harvard Aviation Field. The programme will include a number of events for amateurs and those who stand no chance against the big stars. It is announced that both Mr. C. Grahame-White and Mr. A. V. Roe will take part.

ROUND-ABOUT FRENCH NOTES.

By OISEAU.

DESPITE statements to the contrary, no change of design has been made in the Antoinette motors during the past few months. They still retain their original system of pumping the petrol direct to the cylinders, and so far the only motor to be fitted with a magnet to that on M. Latham's own machine. The sole reason of the increased efficiency lately obtained is that far more attention is paid to strength of construction with a slight increase of weight. In the early days many decidedly inconvenient stops were caused by breakages of the small petrol (induction) pipes and of the leather belt driving the pump, both of which have now been greatly strengthened.

It should be remembered, when criticising the Antoinette people for not installing a conventional carburettor, that one of the most successful of modern aviation engines—the Wright—has very much the same system of injecting petrol, with apparently good results. At least, I understand that no alteration is contemplated.

I enclose a sketch of the tail fitted on the Farman used by Legagneux in the Circuit de l'Est. It is interesting to observe the tendency of even the most confirmed exponents of the biplane

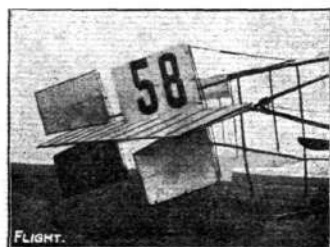
amongst aeroplane constructors towards the monoplane idea in their new designs. The latest Farman with its cut-away lower plane and monoplane tail working in unison with the front elevator, as far as elevating is concerned, has almost more of the monoplane than the biplane in its construction. In the new experimental Voisin, the Breguet, and the

Goupy, even the front elevator has been suppressed, the tail performing all the necessary functions in a quite satisfactory manner. The absence of the front elevator certainly removes that curious buffeting sensation experienced in flight on the ordinary biplane, and at the same time has given an increase of speed.

The results of the Circuit de l'Est would certainly lead people to believe the monoplane greatly superior to any multiplane machine, but I believe their success to have been due largely to the speed obtainable from the combination of a powerful motor and a small aeroplane. Speed invariably increases stability. But surely the present thirst for speed is making aviators forget that a very much more important point is the ability to go slowly. There the biplane still has an unchallenged lead. On almost any monoplane save the Antoinette (an exception due to its wing area), a speed of less than 30 m.p.h. is hardly possible. The Wright machine is still unrivalled for travelling slowly, it being possible for a skilful pilot, such as the Count de Lambert, to average 25 m.p.h. for considerable periods of time.

I was talking a few days ago to one of the most distinguished of French aviators, and in the course of conversation he said that later in the year he had every intention of taking a prolonged rest from aviation, on the ground that the skill of the pilots had got beyond the safe possibilities of the machine. Day by day the feats expected at exhibitions become more difficult and more dangerous, and he considers (like Mr. Moore-Brabazon) the competition of certain firms too great to resist. The returns, too, are less and less as time goes on. He thinks cross-country flying more useful, and if high enough safer than aerodrome work. There is in it no need for the trick methods of public exhibition.

The Brasier firm are at present testing a new four-cylinder vertical aeroplane engine, designed and built by themselves. In appearance it differs but little from the ordinary type of car engine, the cylinders, with their water jackets, being cast in the usual manner. The bore is 110 mm., and the stroke about 130 mm., the estimated horse-power being 40 at normal revolutions. Ignition is by Bosch high-tension magneto. I can give no detailed description, as at present matters are merely in the experimental stage.



The new tail on Legagneux's Henry Farman machine.

THE CIRCUIT DE L'EST.

IN our last issue we were able to record the progress of the aviators in the cross-country race organised by *Le Matin* up to Tuesday, when they reached Nancy, the end of the second stage. Although Lindpaintner hoped to get his machine repaired in time to complete the journey, he was disappointed, and had to retire, thus reducing the number of competitors to three. Wednesday was spent at Nancy, when Legagneux carried off three local prizes, aggregating 13,000 francs. In the course of a flight lasting three quarters of an hour he flew to the German frontier and back, thus winning 4,000 francs. He also won a similar prize for duration, flying 36 kiloms. over the aerodrome in 37 mins. 47 secs. De Lesseps, on a Sommer, also covered 6 kiloms., and Lindpaintner, who had arrived meantime, made a two-minute trip. Legagneux also secured the height prize with 500 metres, Lindpaintner going up to 320 metres. Several of the military aviators made flights along the frontier, reference to which is made elsewhere.

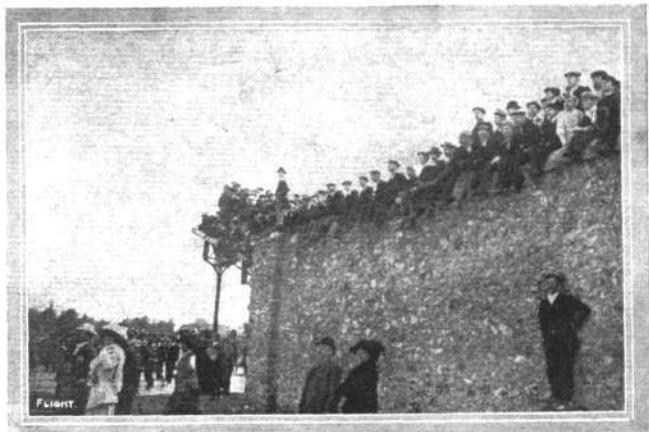
Thursday was devoted to the third stage of the race to Mezieres. Unfortunately the weather was very bad, but, in spite of this, Leblanc and Aubrun both got through, although the latter lost his way. Lindpaintner and Legagneux also started, but the latter landed just outside the aerodrome, while the Sommer pilot reached Champigneulle, where he was forced to land owing to the storm. Leblanc completed the journey in 2h. 4m. 29½s., but Aubrun made a stop at Chalons in order to procure a new map, his old one having been blown away. His time was 3h. 46m. 58s.

Friday was spent at Mezieres, where a series of exhibition flights were made by Weymann and Mamet. None of them were of any lengthy duration. The former, who proposed to carry Lindpaintner over to Sedan, had to pull up suddenly at the start, owing to the crowd getting in the way, and in landing smashed his machine. During the day Legagneux flew over from Nancy, stopping at Ambly-sur-Meuse in order to have lunch with Martinet and some other friends.

Four machines started from Mezieres on Saturday for Douai, as Mamet and Legagneux determined to continue as well as the two competitors still left in. The two former started in the morning, but they only completed a little over 30 kiloms., when they were forced to land by the storm. Leblanc and Aubrun waited for the weather to moderate and eventually left about 4 o'clock in the afternoon. They both got through, although very exhausted, as they had to battle against the weather all the way. Aubrun was the first home, he having covered the 135 kiloms. in 2h. 19m. 4s., while Leblanc took 3h. 3m. 18s. He was forced to make a stop of half an hour at Landrecies. Legagneux eventually succeeded in reaching Douai after many stops to enquire his way. Mamet also attempted to get on but only reached Capelle, where he stayed the night, completing the journey to Douai on Sunday morning. Sunday was spent at Douai, where a series of exhibition flights were carried out by Legagneux, Bregi and de Baeder.

On Monday the stage was a short one to Amiens, and our competitors started off on the 80 kilom. trip, Leblanc and Aubrun being accompanied by Legagneux and Noel on a Blériot. The last-mentioned, however, only got as far as Arras, where he landed, breaking his propeller in so doing. Leblanc made the quickest journey, only taking 1h. 7m. 31s. for the trip, while Aubrun occupied 1h. 24m. 24s., and Legagneux 1h. 34m. 32½s.

Tuesday was passed at Amiens, and the two competitors spent their time in making thorough preparation for the last stage of the journey back to Paris. A series of competitions had been arranged to take place at Amiens, but Legagneux was the only one to bring out his machine, beyond the military aviators, who gave demonstra-



Waiting for the competitors to arrive at Troyes last week in the "Circuit de l'Est." A remarkable "grand stand."

tions. Lieuts. Cammerman, Acquaviva, and Letheux all covered a course of 12 kiloms., Acquaviva, on his Blériot, making the best time of 13 mins. 11 secs. Lieut. Cammerman afterwards took General Picquet for a short trip on his machine. Legagneux made two flights of a little over 20 kiloms. each.

Leblanc was the first to leave Amiens on Wednesday morning at three minutes past 5. Two minutes later he was followed by Aubrun, and after a further period of two minutes Lieut. Letheux started, while Legagneux also was on his way at a quarter past 5. The first to arrive at Issy was Leblanc at 6.45, and he thus wins the *Matin* prize of £4,000. Both he and Aubrun, who arrived twenty minutes later, were given a very enthusiastic reception by the great crowd. Leblanc's time for the full distance of 790 kiloms. is given, unofficially, as 11 hrs. 56 mins.

AERO MODELS ASSOCIATION.



R. F. Mann, of Arundel House School Aero Club, who secured first prize in the Youths' Competition, launching his model at the Crystal Palace Meeting on Saturday.

LAST Saturday afternoon a very interesting series of competitions for model flying machines was held at the Crystal Palace, and the official results are given below. The competitors included a lady, Mrs. V. O. Ding, while the youngest was a boy of eight named G. Clarke Rogers, who gained two prizes. In each class the maximum number of marks obtainable was 100.

Result of Class 1. (1 sq. ft. of surface and under.) 17 competitors.—1st prize, R. R. Drake, 80 marks; 2nd, G. Clarke Rogers, 73; 3rd, F. Rogers, 68.

Result of Class 2. (1 to 2 sq. ft. surface.) 7 competitors.—1st prize, Rowland Ding, 72 marks; 2nd, W. H. Sayers, 68; 3rd, E. W. Twining, 54.

Result of Class 3. (2 to 4 sq. ft. surface.) 7 competitors.—1st prize, F. Rogers, 80 marks; 2nd, C. Fleming Williams, 77; 3rd, W. H. Sayers, 63.

Result of Class 4. (4 to 8 sq. ft. surface.) 3 competitors.—1st prize, G. P. Bragg Smith, 84 marks; Rowland Ding, 63; Percy E. Hall, 49.

Result of Class 5. (Unlimited surface.) 10 competitors.—1st prize, W. H. Sayers, 82 marks; 2nd, H. Burge Webb, 71; 3rd, F. Rogers, 64.

Result of The Boy Scouts and Youths Class.—7 competitors. 1st prize, R. F. Mann, 76 marks; 2nd, H. Murray, 68; 3rd, G. Clarke Rogers, 47.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 16th inst., when there were present:—Mr. R. W. Wallace, K.C., (in the Chair), Mr. Griffith Brewer, Prof. A. K. Huntington, Mr. C. F. Pollock, Mr. Stanley Spooner, and Harold E. Perrin, Secretary.

New Members.—The following new members were elected:—

Maj. R. L. Benwell.	Hon. H. W. Lawson, M.P.
G. H. K. Bone.	G. Marconi.
Lieut. H. F. Burke, R.A.	James Radley.
Capt. W. E. Castens, R.A.	H. D. Seale.
R. J. H. Hope.	C. H. Urmston.

Federation Aeronautique Internationale Conference.—The Committee considered the suggestions to be submitted to the F.A.I. at its Conference, which will take place in Paris in October next.

Association.—The Association Agreement of the Bristol and West of England Aero Club was approved and signed.

Harbord Cup.—The cup presented by the Hon. Mrs. Assheton Harbord was awarded to Mr. Philip Gardner, whose voyage to Minehead on July 11th, 1910, was declared to be the longest recorded in the competition.

Rolls Memorial.—The Chairman presented a report of the meeting at which delegates of the Club had met delegates of the Royal Automobile Club that afternoon to discuss joint action with the object of commemorating the services rendered to automobilism and aeronautics by the late Hon. C. S. Rolls. It had been decided to invite the members of the two Clubs to subscribe to a fund to provide a bas-relief, to be placed on the premises of each Club, and the surplus, if any, to be devoted to the establishment of a Rolls Memorial Aeronautical Library at the Royal Aero Club. Further details will be announced later.

Flights over the Solent.—The following letter addressed to the Secretary was read from the Motor Yacht Club:—

August 13th, 1910.

"Dear Sir,—At a recent meeting of my Committee, a letter was read from Mr. Griffith Brewer referring to a proposal to hold aeroplane flights in the Solent, the start to be from a barge, and the course to be round the 'Enchantress' and back to the barge. As a

result I have much pleasure in informing you that the following resolution was carried unanimously:—

"That the members of the Royal Aero Club be invited by the M.Y.C. to be honorary members of the club on all flying days."

"I shall be glad, therefore, if you will kindly place this invitation before your committee, and inform me from time to time when flights are likely to take place in the vicinity of Southampton Water."

"Yours faithfully,

(Signed) "W. A. JUPP, Secretary."

Lanark Meeting.—The Committee unanimously awarded special medals of merit to J. Armstrong Drexel, for beating the world's record by his altitude flight on August 11th, 1910; and to James Radley, for beating the world's record for speed over a mile course on August 13th, 1910.

It was resolved that a letter be sent to the Scottish Aeronautical Society, congratulating them on the excellence of the organisation at the Scottish International Aviation Meeting at Lanark.

Committee Meeting.—The next Committee meeting will take place on Tuesday, September 6th, 1910.

Gordon-Bennett Aviation Cup.

The International contest for the Gordon-Bennett Aviation Cup will take place in October next in the United States. The exact locale will be announced later. The Royal Aero Club has sent entries for three representatives, and at present two of its three nominees have been chosen, namely, C. Grahame-White and James Radley. The Hon. Maurice Egerton, who originally offered to represent the Club, has been obliged to withdraw, not having as yet entirely recovered from the effects of his recent accident at Eastchurch. The Club will come to a decision later on with regard to the choice of a third representative. The length of the course for this year's contest will be 100 kilometres (62½ miles) in a closed circuit, having a perimeter of not less than 5 kilometres.

In addition to this particular International race, other events will take place at the meeting, for which prizes amounting to £10,000 are announced.

HAROLD E. PERRIN,
Secretary.

166, Piccadilly.

CORRESPONDENCE.

. The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents asking questions relating to articles which they have read in **FLIGHT**, would much facilitate our work of reference by giving the number of the letter.

NOTE.—Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.

ACCURACY OF ALTITUDE MEASUREMENTS.

[689] I see that at several meetings the barograph height measurements have been discarded entirely in favour of measurements made by optical instruments. The latter, when the object viewed is in sight and when the length of the base line is accurately known, are no doubt the better measurements; but I do not see that either of these factors can be or ever are known accurately in the case of a machine flying at, say, 60 miles an hour and so nearly out of sight as only to be visible with a strong glass. If the machine is out of sight the measurement is impossible. I suggest that far and away the most accurate way of measuring the height attained is as follows: A barograph is suspended on the aeroplane so as to be as free as possible from vibration—this can be done by suitably mounting it on springs, in turn attached to short flexible hompen cords and using a dead-beat instrument. When the flight is over the barograph is at once taken out and placed under the receiver of an air-pump, which is in connection with a mercury manometer. The receiver is exhausted until the barograph pointer shows the maximum reading attained during the flight, and then the mercury manometer is read and its reading converted into feet. The error in this experiment is very small indeed if only a short time elapses

between the flight and the air-pump measurement. I suggest that a suitable air-pump and mercury manometer be provided at all meetings or where height records are being attacked, and that the barograph readings be in future accepted when checked in this way. Please make any use you like of this letter.

G. H. COLT.

CHAUVIERE PROPELLER.

[690] I should be very pleased if you could inform me through your excellent paper if there is any reason for curving the leading edge of a propeller forwards, as is done in the Chauviere blades. Also why is the tip of the trailing edge curved backwards?

If these questions can be answered mathematically, I should be pleased.

Canterbury.

E. H. T. MORRIS.

[The characteristic of the Chauviere propeller referred to above is properly regarded as related to the use of pointed extremities for the blades for the purpose of reducing the stray-field. We are not aware of any scientific reason for the exact shape adopted.—ED.]

"SCORING BOARDS" AT AVIATION MEETINGS.

[691] May I, through the medium of your columns, express a hope that the management of the telegraph board may be better arranged at future flying meetings than it was at Lanark. At the latter meeting information as to the flyer and the object of his flight was so long in being posted up that at times it was quite useless, and came after the flyer had returned home. One can understand, of course, that there must be delay in telegraphing results; but

surely the pilot's number and that of the competition for which he is out might be shown directly after he has started.

Again, the method of showing the number, &c., seemed unnecessarily cumbersome. Could not the whitewash on black plates, such as is used on racing cars at Brooklands, have been adapted to the telegraph board? This would, I feel sure, have been a far quicker method than the "bill-sticking" process adopted at Lanark.

Dumfries.

AN INTERESTED ONLOOKER.

MR. MOORE-BRABAZON AND MEETINGS.

[692] I entirely agree with Mr. Moore-Brabazon's remarks and his attitude with regard to aviation meetings, not that I mean by this concurrence any implication against the scientific attainments of some of the aviators who still take part in public meetings. However, it must be acknowledged that such meetings are no more nor less than a "travelling form of entertainment" at the present time, as it would appear that the science of neither aeroplane nor engine construction is advanced one tittle by such exhibitions. Last year it was another matter, and it must be obvious to all that the first Rheims meeting did infinite good to the whole aviation movement by bringing out the capabilities of the aviators and machines as they then were.

But can we attribute much in the way of improvement to the machines themselves to the Rheims meeting or any subsequent one? No, I say, emphatically.

After all, watching a machine in flight does become rather a bore in time when the prevailing conditions are such that no new problem presents itself during such an exhibition. Aviators who are also scientific investigators are far too valuable an acquisition to the nation to be encouraged to carry on public performances and run unnecessary risks to amuse a holiday crowd.

There is another class of aviator—the man who is out to make money. Let him make it by all means if he can, and has sufficient luck not to suffer too much personal injury thereby. The odds, however, are against him, and he deserves all he gets.

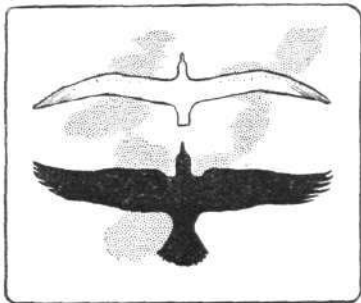
I am glad to see Mr. Moore-Brabazon's plain statement of the facts of his case, and I can only say that when my new aeroplane and engine are ready I shall not run too many personal risks until such a time as I have produced either something good or ended in hopeless failure.

Piccadilly.

ROBERT W. A. BREWER.

TAILED V. TAILLESS BIRDS.

[693] Have any of your readers remarked upon the lack of tail in the gull family? None have any worth speaking of, but seem to maintain equilibrium by means of their wings, which slope slightly



backwards, whereas a crow or any similar bird with a broad tail are set at no such angle to the body. The former appears to be the Dunne principle.

Chester.

H. BEST.

HENSON AND KRESS AEROPLANES.

[694] Mr. Vernham (letter 625) will be able to obtain full information concerning the work of Henson and Stringfellow in one of the volumes of "Aeronautical Classics" being published during this year by the Aeronautical Society of Great Britain, 53, Victoria Street, S.W.

The large machine projected was never actually brought to maturity. Several models were, however, made, and one flew. One of these models is in the possession of the Aeronautical Society, and shows remarkable knowledge of the science of flight. For instance, certain round members have been given an ichthyoid section by the addition of shaped cork along one side.

The Kress machine had three wings, one behind the other, in

different planes; it had only two screws, side by side. Steering was by rudders in the rear. It was made to rise from the water, but never actually did so, being accidentally sunk just when it was commencing to rise. A full description of Kress's work is given in his book, published in 1905. This has been translated into French ("Comment l'oiseau vole, comment l'homme volera"), and a copy will be found in the library of the Aeronautical Society, which Society Mr. Vernham will be well advised to join, especially if he wishes to learn about the work of the early pioneers, as, being founded in 1865, the Society has a unique collection of records.

Surbiton.

OCTAVIUS.

BROOKINS' HEIGHT RECORD.

[695] I was astonished on my arrival from America to learn that Brookins' height record on a Wright flyer is not only doubted but scoffed at in this country. The prize of £1,000 was only payable on a record being proved, and surely if the proof was sufficient to enforce this payment, it should be sufficient for ourselves.

I have myself examined the certificates of the surveyors who measured the heights, and I fortunately took an abstract of these when I was in Dayton early this month, so I am able to give you a copy of this abridgment, which is as follows:—

Abridgment of Engineer's Report.

"Atlantic City Aero Club, July 11th, 1910.

"Gentlemen,—We beg leave to report that we have determined the height of the undersides of the runners of the Wright biplane occupied by Mr. Walter R. Brookins at the time of crossing the established base line between the two instrument stations (7h. 03m. 55s. p.m., July 9th, 1910) to have been 6,175 ft. (nearest even ft.) above sea-level.

"Stations approximately 2½ miles apart.

"Time of crossing the line varied 2 secs. by one observer to the other.

"Observations were taken, Mr. Frank D. Mount and William A. Craig at one station, and John W. Hackney and Walton Risley at other station."

Abridgment of Altitude Record Report of Atlantic City Aero Club and National Council Aero Club of America.

"Atlantic City, N.Y., July 8th, 1910.

"Station No. 1.—Berkley Square and Boardwalk. In charge of Mr. F. D. Mount, C.E., Asst. City Engineer, William A. Craig, Asst.

"Station No. 2.—End of steel pier. In charge of John W. Hackney, C.E., Walton Risley, Asst. Stations equipped with transits.

"On aeroplane.—Richard recording barometer, 5,000 metres, No. 48188, two aneroids.

"Walter R. Brookins, Wright flyer, No. 4.

"Start, 6:7:30 p.m.; landed, 7:11 p.m.; altitude, 6,175 ft.

"Time, 1:03:55 p.m.

(Signed) "J. W. Hackney, F. D. Mount.

"Henry M. Neeley (Chairman Contests Committee, National Council A.C. of America).

"Augustus Post (Recorder).

"John J. White (President Atlantic City A.C.).

"W. A. Jones, Brigadier-General U.S. Engineer Corps (retired)."

If we doubt the genuineness of a flight in America when it is vouched for by two officials of the Aero Club of America, an army officer, and four professional surveyors, one of whom holds an official position, we open all our own records to similar doubt.

GRIFFITH BREWER.

DIHEDRAL ANGLE.

[696] Having seen the interesting letter of Mr. Arthur C. Basebe in your issue of July 9th, and given much attention to the problem of mechanical flight, I respectfully submit the following opinion:—If the weight of the machine and the ordinary resistance of the air are the only forces which need be considered, his letter describes very clearly what takes place. The only disturbing factor that I can see is the effect of a side wind.

If the tilting of the planes is caused by a sudden side wind the tilting effect increases in proportion as the aeroplane turns out of its normal position, and may even become greater than the righting effect of the vertical pressure. The result would depend, of course, on the speed of the side wind and the angle formed between the two planes. The effect of such a side wind may be reduced by curving the two planes symmetrically like the wings of a bird, so that the lower side is concave and the upper side convex.

Perhaps some of your readers have made exact calculations or experiments on this subject.

J. WETTER.

WING WARPING.

[697] May I, as an admirer of your most excellent journal, FLIGHT, venture to take the opportunity of obtaining information from you which will, no doubt, greatly increase my small knowledge of aviation?

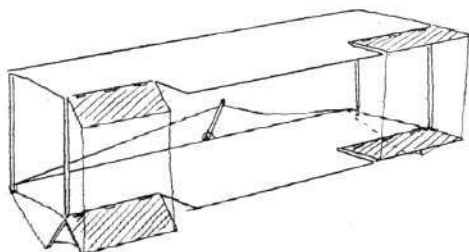
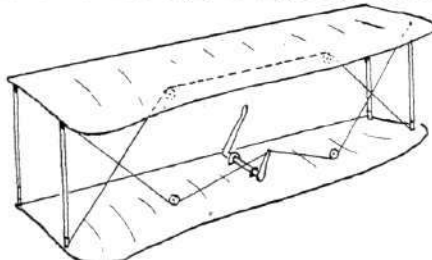
I am anxious to know how warping is carried on in biplanes, and whether it is a real necessity or not; and, also, what is the use of ailerons, and how are they controlled? What are balancing-flaps? Should the tail planes of a biplane have the same camber as that of the main planes? On a model biplane of 3-ft. span would it be necessary to use twin-propellers? How can the revs. per min. be counted on a model with elastic motor? Have models with a dihedral angle any advantages?

East Kirkby.

LESLIE WAGGOTT.

[Warping is effected on the Wright biplane as shown in the first of the accompanying sketches. A lever, which can be moved sideways, is attached by means of diagonal wires and pulleys to the rear corners of the upper-deck. The corners of the lower-deck are coupled together by a diagonal wire, as shown in sketch; when the lever is pushed to one side it causes the extremity at one end of the plane to be deflected downwards while the opposite extremity becomes less cambered than it was originally, or, if it is practically flat to start with, the effect of the manoeuvre will be to warp the edge upwards. The lower-deck follows the movements of the upper-deck by virtue of the connections formed by the struts and the wires.

Ailerons, or balancing flaps as they are termed in English, produce the same effect as wing-warping by another means. They consist as their name implies of hinged flaps attached to the



trailing edges of the decks, and as they are entirely separate members their presence does not interfere with the rigid construction of the planes themselves in the way that warping necessarily does. The balancing flaps are allowed to trail in the wind, the control-lever being employed to forcibly depress one pair or the other.

The object of these devices is to provide a means of dynamic control over the lateral equilibrium of the machine. The effect of drawing a balancing flap downwards is to virtually increase the camber of the plane at that point, and consequently to give it an increased lift for the same velocity. If that side of the machine happens to be canted downwards the effect of such a manoeuvre, properly carried out, is to restore equilibrium.

The effective angle of the tail of the machine should be less than that of the main planes.

The question of using one or two propellers on a model must be left to the designer.

The total number of revolutions made by a propeller driven by an elastic motor will be equal to the number of turns that were initially put into the elastic. If the duration of the action of the propeller be timed with a watch, then the revolutions per minute will be approximately represented by dividing the total number of turns by the time.

Some designers consider the dihedral angle to be a useful method of obtaining a certain amount of natural lateral stability.—ED.]

AERONAUTICAL TERMINOLOGY.

[698] Seeing that you invite correspondence on this subject I would like to unburden myself. As a record of agreement would be more or less waste of space I will confine myself to the captious side of the matter!

First, I would protest against *airman*. It is better than the awful *bird-man*, but that is about all. It is merely a using up of *seaman* (an extinct naval term) for aerial purposes, and comes in the same category as *motor man* evolved from *coachman*. Is not the American *driver* a better word? It is shorter and easier to the tongue. In motoring it has won its way against all other terms.

There are objections, of course, for one thing, it does not explain itself like *chauffeur* used to do in the early motoring days. But on the other hand *driver* doesn't explain itself on the earth, for all that it satisfies. *Air driver* could be used when requisite, just as *motor driver* or *coach driver* is. Generally the prefix is not required. As regards the absurdity of *airman*; let anyone put *seaman* into any account of naval manoeuvres or yacht racing, like *airman* is used, to see the superfluity.

I am not suggesting *driver* as an ideal substitute, because I take it that an equivalent to *sailor* is the word sought. I fancy that the proper word will have to invent itself later on. *Pilot* was pretty good till—like *airman*—it became offensive from over-using. When we do get the right word it won't do that.

Next, for the noble effort of *Aerocar* as a generic term for all things that fly. It is a good attempt, but I cannot see it existing any more than did "autocar," for what the public calls a *Motor Automobile* has lived in a way, but mainly, I fancy, because of the R.A.C. and the American way of pronouncing the word. We need a word equivalent to *ship* or *bike*, i.e., something short. I rather fancy that the American term *flyer* is likely to get a vogue eventually as a generic term; failing it, *airship*, which is to-day the American generic; sub-divisions, *dirigible* and *plane*. Short words are bound to win through whatever sound reasons there may be for some other, and *airship* is two short syllables. That we use it now for dirigibles hardly counts. It is handy because of its semblance to warship or steamship. A destroyer is a warship when a generic term is required, but that never leads to its being confused with other types.

Elevator will, I fancy, have to go, as too long. They have evolved *riser* in America, but I fancy that *lifter* will be the eventual word. It comes easier to the tongue.

I don't think much of *port* and *starboard*. They survive afloat, but it is a case of survival: and *left* and *right* are slowly killing them. *Fore* and *aft* are, however, likely to get into the air, because they are shorter than front and rear.

I think it would help matters if all who suggest terms, before trying to hit on fancy words, asked themselves how such words as throttle, spark, cruiser, aft, funnel, boiler, tender, &c., came into general use, and keep well before them the advantages of brevity in a term, and ease in saying it. Also to remember how many very appropriate enough terms, such as ironclad, locomotive, self-propelled vehicle, horseless-carriage, motorman, &c., have died out.

Likewise and also, I would suggest that all who advocate terms ought to bind themselves to sacrifice their own suggestions if some other term meets with more favour. We are making words for our descendants, and we have our American cousins to think of, as they use the same language. I think, by the way, that America ought to be consulted.

Summarised, my suggestions are:—

Air ship, anything whatever that mechanically goes up in the air. (Sub-divisions, *Dirigible* and *Plane* (or *Flyer*.)

(Air) Driver, whoever controls an *Airship*. (Sub-divisions *Aeronaut* and *Aviator*.)

I don't pretend that these terms are ideal, but I do contend that they blend British and American use.

I would further suggest that we use the metric system to the extent of millimetres only for bore and stroke of engines, and of planes and cubic capacity of dirigibles. The attempts made to reckon engines in inches and fractions of an inch confuse and are unscientific also.

I'm afraid this is a fearfully long letter, and all in the face of my advocacy of brevity; but the subject is a difficult one to get into a nutshell.

FRED. T. JANE.

[In common with Mr. Jane, we have little admiration for the term *air-man*, but the fact remains that a generic is required and the special significance that now attaches to the term *pilot*, as implying an aviator or an aeronaut possessed of a certificate, rather debars that term from further generic use. The sense in which it is required is scarcely adequately supplied by Mr. Jane's alternative *driver*. One speaks of a man as being an ardent yachtsman or a

great motorist; it would never do to call him a driver. Perhaps the best example of an adopted term of this kind is to be found in the phrase "he is a fine whip." In course of time, when the effort will be a little less forced, something as neat may be found for air-men. In many ways the word *flyer* is a useful term for the purpose, and is, moreover, appropriate to the machine and to the man. Perhaps it is best used in reference to the abstract quality rather than to the concrete machine—as, for instance, in such a sentence as "The latest model is a better flyer than the first"—and may be left as a general rather than a technical term.

We scarcely expected that our new-coined word *aerocar* would pass uncriticised, but in the matter of alternatives we disagree with our correspondent's view that the word *airship* is a permissible generic. It seems to us that the least desirable thing to do in building up the terminology of a new science is to change the use of a term from one of specific reference to do duty in the capacity of a generic. There is not the least shadow of doubt that the word *airship* has hitherto been used as signifying *dirigible balloon*, and to anyone who has followed aeronautics at all it still has that meaning. This fact cannot be disregarded, for to do so is to disregard the sole purpose of any effort to establish a useful vocabulary of aeronautical terms. It would not matter if such terms never got further than the dictionary; but we have to use them every day, and although it is quite true that we may be doing a little to assist posterity, the main purpose of our work is to help the present generation to understand what they read about the subject. Now and again placards have lately appeared in the London streets bearing legends to the effect that this or that *airship* has done something marvellous or come to grief. The *airship* has almost invariably turned out to be an *aeroplane*. We feel convinced that this misuse of the term is only the result of ignorance about the accepted distinction between the two types of machine. The journals in question have undoubtedly wished to give the public the fullest possible information, and we are perfectly certain that they would never tolerate such a careless report if they were acquainted with the facts. Now the question is, does the public at large want to be acquainted with the facts? Just at the moment it may be all the same to the majority of people as to whether it is an airship or an aeroplane, but in a very short while the all-round interest in the subject will have developed to a degree where the amount of technical information that is now considered superfluous will be regarded as childishly insufficient. What will the man in the street say later on when he buys a halfpenny evening paper to read the particulars relating to a placarded notice of "an Army airship disaster," and finds that instead of the wreck of a £100,000 dirigible it is only some old hack biplane that has had its skid broken by a pilot recruit.

We have nothing to say against the appropriateness of the word *airship* as a generic, but we have every objection to its present use in that capacity, because of the confusion that results therefrom. If it could be abandoned altogether for a period, a future generation could reinstate it as a generic if it were wanted, but that we must leave to chance and the future generation. The alternative for *airship*, which is *dirigible*, is a very useful term; but, on the other hand, it is a very feeble effort if it has to stand by itself, for it is after all nothing but the adjectival prefix of a compound noun, the full term being *dirigible-balloon*. This, however, we consider as quite immaterial when compared with the generic use of the term *airship* itself.

The use of the word *'plane* as an abbreviation for the word *aeroplane* is, we consider, also undesirable, for the simple reason that the term *plane* is needed to define the wings of an aeroplane. It will have been observed that the general construction of terms in our article involved the systematic prefix of the word *aero* in cases where a machine or the thing as a whole is implied, thus leaving the abbreviated words for component parts of the machine. Thus for the same reason that we disapprove of the abbreviation *'plane* as signifying *aeroplane*, so do we consider it undesirable to use the word *aeroplane* when only the planes themselves are meant.

It is really rather comical that the Americans should be developing a tendency to adopt the word *lifter* instead of *elevator*, when they studiously persist in retaining the longer term to define the apparatus now used in all big buildings that we in England have always been satisfied to call the lift. Perhaps this is rather an argument in favour of our own adoption of the word *lifter*, and as an alternative for *elevator* it is certainly worth consideration. We can scarcely express an equal appreciation of the word *riser*, however, which is rather too much of an example of the unfortunate type of Americanism.

It is interesting to have Mr. Jane's opinion on *port* and *starboard* and we should like to have that of others who are similarly acquainted with their use from a naval point of view. For our own part we should certainly prefer to see *left* and *right* adopted if they meet all exigencies equally well.—E.D.]

MODELS.

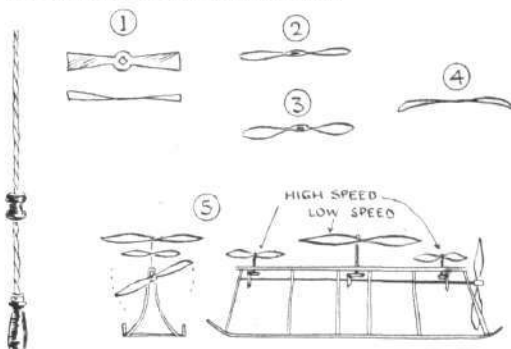
TESTING MODEL PROPELLERS.

[699] Some of your readers may wish to know of a cheap and profitable way of testing propeller forms.

I have not had time to do more than verify the efficiency of the blade of constant pitch, but think that the method has many merits.

I have bought a number of those toys which consist of a tin-plate propeller bored square to fit a twisted square rod; being forced along this they fly off at the free end, owing to their high speed of rotation. The crude shape (1) rises only some 20 ft., but a propeller bent so as to have constant pitch (2) has risen over 100 ft., though but $4\frac{1}{2}$ ins. diameter. No. 3 flies still better, having a pitch increasing from tip to root.

A consideration of the relative velocities of entering edge and air when the propeller has an upward velocity will show that this form should be better than that of constant pitch.



The energy of flight is, of course, kinetic, and much might be done by large propellers loaded with split shot near the tips, whereby the length of flight would be increased.

Square iron rod can be slowly twisted up in the lathe.

Steel "bosses" would be best on account of wear.

I find that bending the tips downwards (4) improves the flight of these toys; centrifugal losses are, no doubt, avoided by it.

Not having time to carry it out, I would suggest the building of direct-lift models on the kinetic principle, with large loaded aluminium or wood propellers for horizontal and vertical movement, connected by light small steel shafts and gearing, as in Fig. 5.

The advantages of the above methods of testing are that a *marving* test is made, that the tests are quickly and cheaply repeated (the toys cost $\frac{1}{2}$ d. and upwards).

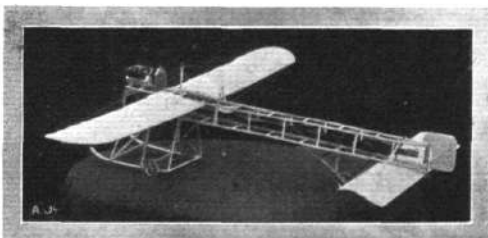
Battersea.

WOULD-BE AERONAUT.

MODEL MONOPLANE.

[700] I herewith enclose a photo of a model monoplane which I have just made. It is approximately 1 in. to 1 ft. scale, and is a combination of various makes. All the wood used is streamline—about $\frac{1}{8}$ in. by $\frac{1}{16}$ in.—except the four main frame-members, which are square. It is also fitted with an eight-cylinder "V" type engine, radiator, petrol-tank, seat, and levers for the rudder and warping of the main planes.

All the wheels have shock-absorbers similar to the Hanriot machines. The planes are double-surfaced, and the body is braced with wire as shown in letter 594.



The whole machine can be taken to pieces in less than a minute, and put together again in about the same time. It is not a wonderful flyer—in fact it only averages 80 to 100 ft. on a calm day.

Brookley Road.

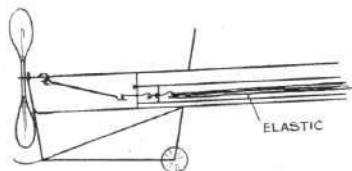
"KLARK."

ELASTIC MOTOR FOR MODEL.

[701] Would Mr. Benn (631) kindly explain to me how he works his seven-strand elastic motor which he mentioned in letter No. 631, and also what type of machine his is, and whether the motor weighing 7½ ozs. is counted in the 45 ozs. total weight?
Horley. N. MARSH.

ANTOINETTE MODEL.

[702] I am sending a photo of an Antoinette type monoplane I have built. It is driven by an elastic motor, and as I have not seen one like it described in your correspondence columns, I have sent a sketch of it.



In the photo, the elastic and frame can be seen faintly through the fabric.

I worked from the scale drawings which you gave in Vol. I of FLIGHT. The machine is 46 ins. wide by 40 ins. long, and weighs 10½ ozs.

Budleigh Salterton.

H. BEASLEY.

A Scotch Monoplane.

MESSRS. W. AND S. POLLOCK have just completed a large monoplane, and announce that they are ready to manufacture complete aeroplanes and engines. The monoplane referred to is of 40 ft. span, and the wings have a chord of 7½ ft. The machine is covered with North British Co.'s fabric, and the 60-h.p. 4-cyl. air-cooled Pollock motor drives a 6 ft. 9 in. adjustable propeller.

The Boyd Engine.

ACTUATED by a very natural desire to show *bona fides*, without prejudicing patent claims, by premature disclosure, the inventor of the Boyd engine has shown us his working drawings and has asked us to say that we have seen them and to give his assurance that the constructive work is actually in progress. Although we are not at liberty, for the reason above stated, to give details or even a general description of the engine, we can at least say that it is one of the most extraordinary designs for a motor that has ever been brought before our notice, and if the engineers succeed in making it work in the manner that they so confidently anticipate we can at least promise our readers that any present curiosity they may feel in the matter will be small by comparison with the interest that must naturally follow the development of the scheme.

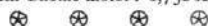
The Boyd engine is a rotary motor, but it is not at all like the Gnome or any other rotary motor that is in operation to-day, nor is it exactly correct to call it a turbine, for the accepted idea of a gas turbine involves a process of continuous combustion, whereas in the Boyd engine the Otto cycle of operations takes place inside the main chamber in a manner that is at any rate comparable with the characteristics of an ordinary reciprocating engine.

RECORDS.

Distance and Duration.—Olielslaegers (Belgium), at Rheims, on a Blériot monoplane with Gnome engine: 244'309 miles in 5h. 3m. 5½s.

Speed.—J. Radley (Great Britain), at Lanark, on a Blériot monoplane with Gnome engine: 1 mile in 47½ secs. = 75'95 m.p.h.

Altitude.—J. A. Drexel (Great Britain), at Lanark, on a Blériot monoplane fitted with Gnome motor: 6,750 feet in 52 mins.



NEW COMPANIES REGISTERED.

Aero Engine Co., Ltd.—Capital £5,000, in £1 shares. Manufacturers of, dealers in, and agents for motor cycles, cars, and boats, aeroplanes, &c.

British Airship Advertising and Navigation Co., Ltd., 61-62, Chancery Lane, W.C.—Capital £4,000, in £1 shares. Motor, formed to acquire certain improvements in apparatus for signalling from airships and the like, &c. Directors, E. W. Hopkins and B. S. Greville.

Buckman Engineering (Parent) Co., Ltd., 2, Clement's Inn, Strand, W.C.—Capital £5,000, in £1 shares. Motor, aviation, mechanical, and general engineers, &c. Under agreement with B. J. Buckman and R. S. Buckman.

Planivol, Ltd., 199, Piccadilly, W.—Capital £1,000, in 10,000 ordinary shares of 1s. each and 20,000 deferred shares of 6d. each. Manufacturers of aeroplanes, monoplanes, and motors, engineers, &c. Under agreement with Dominic R. de Simone to acquire certain inventions relating to aeroplanes, motors, screws, engines, and propellers. First directors, D. R. de Simone and P. R. Gibb.



PUBLICATIONS RECEIVED.

The Art of Flying. By Thomas Walker. Aeronautical Classics No. 3. The Aeronautical Society of Great Britain, 53, Victoria Street, S.W. Price 1s. net.

Catalogues.

Blackburn Aeroplanes. The Blackburn Aeroplane Co., 18, Spencer Place, Leeds.

Aviation Catalogue. Brown Bros., Ltd., Great Eastern Street, E.C.



Aeronautical Patents Published.

Applied for in 1909.

Published August 18th, 1910.

90,555. W. E. BACK. Aerial machines.

Applied for in 1910.

Published August 18th, 1910.

473. A. WUNDERLICH. Motor flying machines.

2,203. H. W. HALL. Flying machines.

3,439. T. T. LOVELACE AND HUMBER LTD. Steering flying machines.

7,914. G. DÜSTERLOH. Dirigible aerial vessels.

DIARY OF FORTHCOMING EVENTS.

British Events.

1910.
Aug. 15-20 Blackpool.
Aug. 29-30 Dublin.

1910.
Sept. 12-17 Burton.

Foreign Events.

1910.
Aug. 25-Sept. 4 Havre-Trouville.*
Sept. 24-Oct. 3 Milan.*
Sept. 25-Oct. 3 Biarritz.
Oct. 15-23 New York. Gordon-Bennett Aviation Cup.

1910.
Oct. 18-25 St. Louis. Gordon-Bennett Balloon Race.

Dec. 4-18 Marseilles.

* International.

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